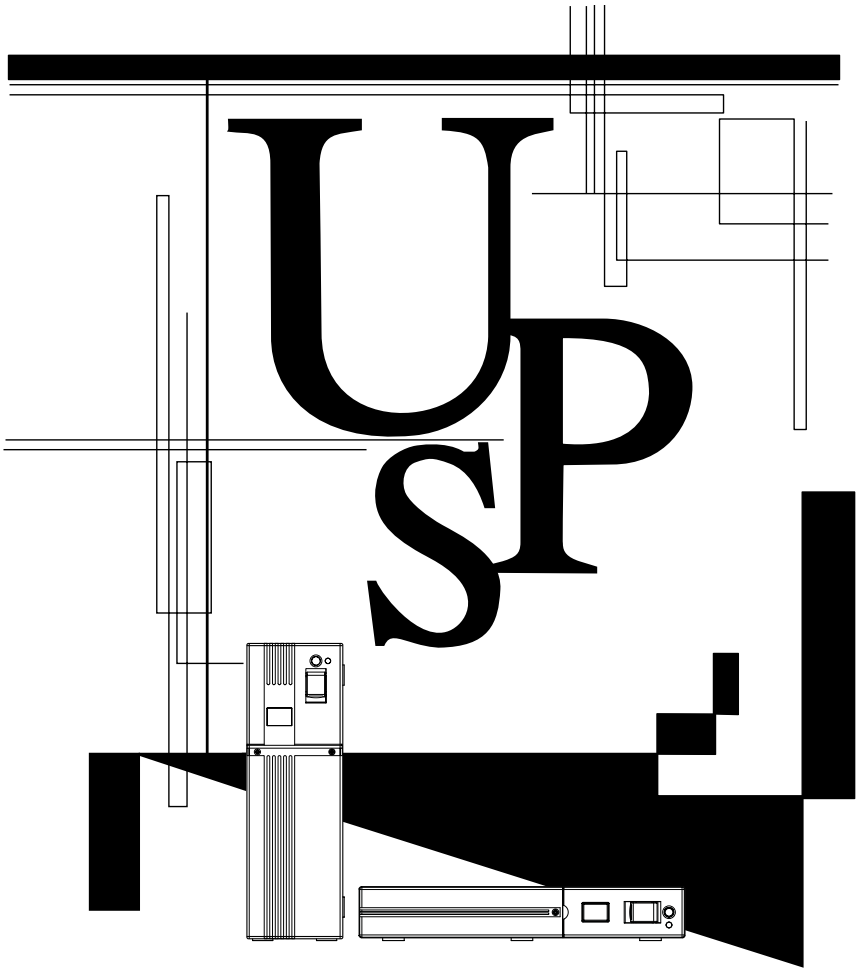
OMRON

Uninterruptible Power Supply (UPS)

POWLI BX35F/BX50F/BX50FW/BX75SW

Instruction Manual



- This manual gives you important information to use the this unit safely and therefore be sure to read it before installation and use.
- Keep this manual handy at the place where you install the this unit so that you can read it whenever necessary.

Introduction

Introduction

Thank you for purchasing the POWLI BX35F/BX50F/BX50FW/BX75SW Uninterruptible Power Supply (UPS).
This unit is a UPS designed specifically for personal computers.

- The UPS protects (backs up) personal computers, displays, peripherals, and so on up to a power consumption of 350VA/210W (BX35F), 500VA/300W (BX50F, BX50FW), 750 VA/450W (BX75SW) from failures in the power supply, such as power failures and voltage variations.
- It protects connected devices from surge coming from power line.
- You can easily replace batteries by yourself.
- By using the UPS monitoring software, the system can be shut down automatically when a power failure occurs.

Read this manual thoroughly to make the most of the unit.

Notes on the use of the Unit

- The unit is designed and manufactured for use for OA equipment such as personal computers. Do not use it when very high reliability and safety are required as listed below.
  - Medical equipment that may cause death directly
  - Applications that may cause injury (applications that directly affect the operation and control of planes, ships, railroads, elevators, and so on)
  - Applications that are always subjected to vibration such as cars and ships
  - Applications in which a failure of this product may cause significant damage or effect to the society and public
    (essential computer systems, main communication equipment, public transportation systems, and so on)
  - Equipment with the same level of importance
- For equipment that greatly affects the safety of people and maintaining public functions, special considerations must be taken for operation, maintenance, and management, such as duplication of the system and emergency power generation facilities.
- Observe the contents of this manual such as the use conditions and environments.
- If you want to use the unit for an important system that requires very high reliability, contact us;_____
- Do not modify/alter the unit.
- This unit is designed for use inside Japan only. Do not use overseas countries (outside Japan).
  - If the voltage or frequency of the power supply differs, a failure or fire may occur.
  - The unit does not comply with overseas safety standards and the EMI standards/regulations.

Disclaimers

We are not liable to all damage including malfunction and failure of equipment, connected devices, and software and other secondary damage even if it is caused by the use of our product.

- Make sure to read the safety precautions before using the unit.

Note on user registration
Please fill out the required items on the included user registration card and send it to our customer support center.

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IMPORTANT SAFETY INSTRUCTION

1.SAVE THESE INSTRUCTIONS.

This manual contains important instruction for Model BX35F, BX50F, BX50FW, BX75SW.
That should be followed during instruction of the UPS and batteries.

2.SYMBOL

This symbol indicates earth ground.

This symbol indicates turning on UPS.

This symbol indicates turning off UPS.

3.INTERNAL BATTERY

Internal battery is Lead-acid type.
For BX35FW, BX50F, BX50FW model, the internal battery voltage is 6V 7.2AH. Each UPS used 2pcs batteries. And the total battery voltage is 12Vdc.
For BX75SW model, the internal battery voltage is 12V 7AH or 7.2AH. The UPS used 2pcs batteries. And the total battery voltage is 24Vdc.

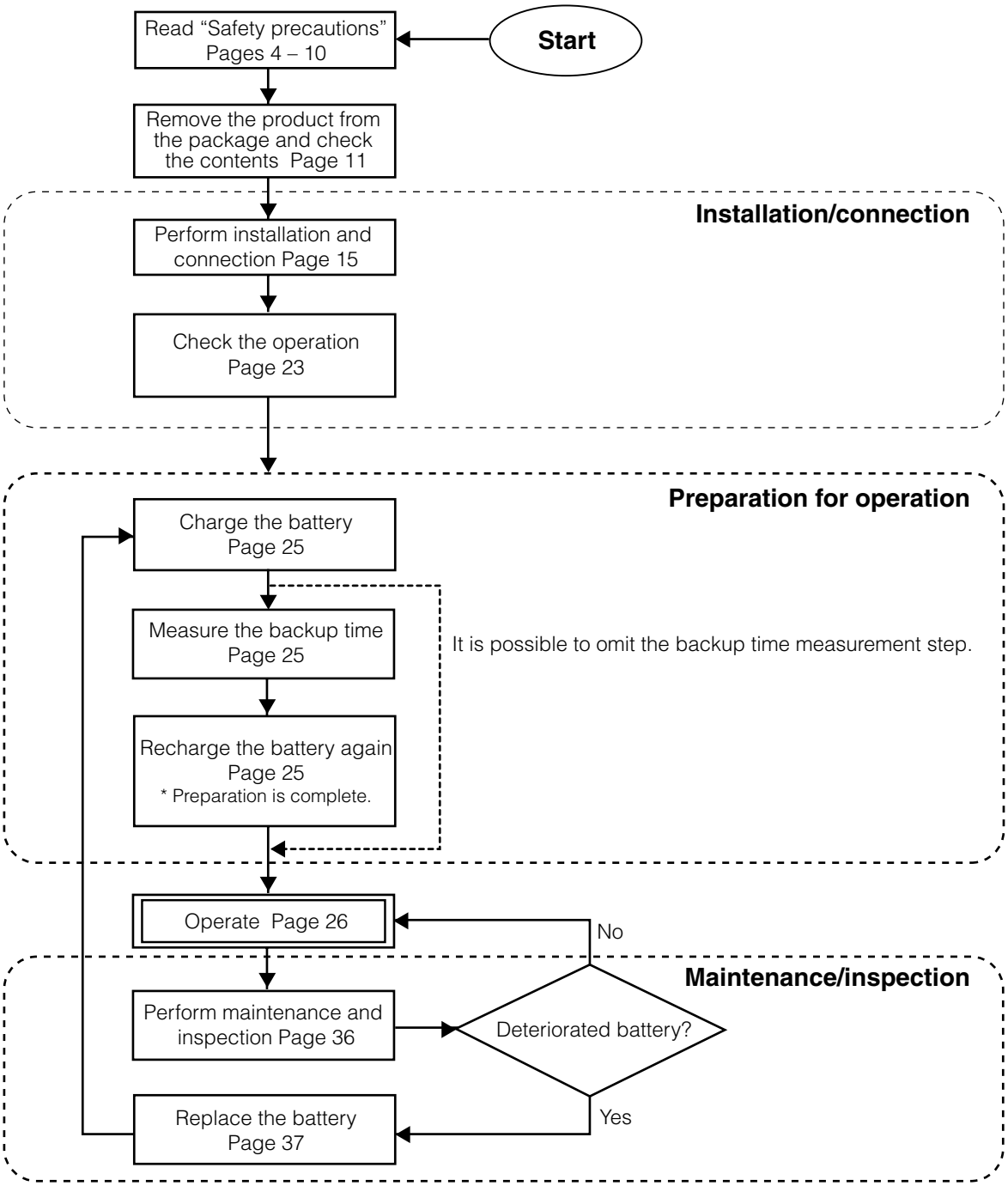
4.TEMPERATURE RATING

Maximun ambit temperature of UPS 40°C.

5.ENVIRONMENT

The unit is intended for installation in a temperature controlled, indoor area free of conductive contaminants.
This pluggable type A equipment with battery already installed by the supplier is operator installable and may be operated by laymen.
During the installation of this equipment it should be assured that the sum of the leakage currents of the UPS and the connected loads does not exceed 3.5mA.
The mains socket outlet that supplies the UPS shall be installed near the UPS and shall be easily accessible.
For battery information, see users manual.

Procedure from installation to operation


Start
Read “Safety precautions” Pages 4 – 10
Remove the product from the package and check the contents Page 11
Installation/connection
Perform installation and connection Page 15
Check the operation Page 23
Preparation for operation
Charge the battery Page 25
Measure the backup time Page 25
It is possible to omit the backup time measurement step.
Recharge the battery again Page 25
* Preparation is complete.
Operate Page 26
No
Maintenance/inspection
Perform maintenance and inspection Page 36
Deteriorated battery?
Yes
Replace the battery Page 37

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Safety precautions

Important information for safe operation is described.
Be sure to read it before installation and start of use.

- The safety symbols and their meaning used in this manual are as follows:

Warning	Misuse may cause death or serious injury.
Caution	Misuse may cause injury or property damage.

* Property damage means damage to houses/household effects, livestock, and pets.

: Indicates prohibition. For example, indicates that disassembly is prohibited.

: Indicates obligation. For example, indicates that grounding is necessary.

Note that events categorized as a caution required matter also may cause more serious results under certain conditions.

Warning

Do not use this unit when very high reliability and safety are required as listed below. This unit is designed and manufactured for use with OA equipment such as personal computers.

- Medical equipment or system that may cause death directly.
- Applications that directly affect the safety of people (For example, the operation and control of cars and elevators).
- Applications in which a failure of the unit may cause significant damage to the society and public (For example, essential computer systems and main communication equipment.)
- Applications with the same level of importance.

Caution (for installation and connection)

Carry the unit considering its weight and balance, and place it on a stable and robust base.

- Dropping or toppling the unit may cause injury.
- The weight of this unit is approximately: 5 kg (BX35F/BX50F/BX50FW)/ 9 kg (BX75SW).
- If you drop the unit, stop using it and have an inspection and repair be done.
  For repair, contact us; ____

Keep plastic package bags out of reach of children.

- They may put their heads into it, and may be suffocated.

Make sure to connect the AC input plug of the unit into a wall outlet (commercial power) with rated input voltage.

- Connecting to a wall outlet (commercial power) of a different rated input voltage may result in fire.
- The unit may fail.

⚠ Caution (for installation and connection)

Do not connect devices such as dryers, which have a half-wave rectifier where only half-cycles of the AC power flows.

- Overcurrent may damage the UPS.

Connect the unit to a wall outlet (commercial power) with a current capacity of 8A or more (BX35F) or 12A or more (BX50F, BX50FW, and BX75SW).

- Otherwise, the power cord may be heated.
- When equipment with the maximum output capacity is connected, a maximum current of 8A or (BX35F) or 12A (BX50F, BX50FW, and BX75SW) flows.

Provide secure grounding.

- For a 3P wall outlet, directly connect the AC input plug of the unit to it. Not doing so may cause an electric shock in the case of unit failure or electric leakage.
- When you use a 3P-2P conversion plug for AC input plug, be sure to perform grounding before connecting the AC input plug into a wall outlet (commercial power).
  Do not disconnect the grounding before disconnecting the AC input plug from a wall outlet (commercial power).
- Grounding is necessary to enable its surge protection function.

Do not disassemble, repair, or modify the unit.

- Doing so may cause an electric shock or a fire.

Do not install the unit in other than specified orientations.

- Dropping or toppling the unit may cause injury.
- If you install the unit in an orientation other than specified, the unit cannot be protected from a battery fluid leakage.

When installing the unit vertically, do not put any object on it.
When installing the unit horizontally, do not put any object heavier than 25kg.

- Doing so may cause distortion of/damage to the case, which may cause a fire.
- When replacing the battery, remove objects that have been placed on the unit.

Do not use the unit where the maximum temperature exceeds 40°C.

- The battery becomes week rapidly, which may cause a fire.
- Doing so may cause a failure or malfunction of the unit.

Do not install or store the unit in the places listed below.

- The humidity is lower than 25%. The humidity is higher than 85%. A closed place such as in a cabinet without clearance. There is flammable gas or corrosive gas. A place subject to vibration or shock. Outdoors.
- Installation or storing the unit in such a place may cause a fire.

Do not use the unit in a closed place or do not cover the unit.

- Doing so may cause abnormal heating or a fire.

Do not connect equipment that exceeds the output capacity of the unit.

- The current protection of the unit may operate, which may stop the output.
- The wiring of the plug strip heats up, which may cause a fire.

⚠ Caution (for installation and connection)

Do not pinch or tie the cable of the unit.

- Doing so may cause the cable to be damaged or heated, which may cause an electric shock or a fire.
- If the cable is damaged, stop using the unit and the cable must be repaired. For repair, contact us; ____

Do not connect devices that use power supply with an improved power factor.

- Overcurrent may damage the UPS.

All of the included accessories are designed to be used exclusively with the unit. Do not use the accessories with other devices.

- Doing so may compromise the safety of devices.

- This UPS utilizes voltages that may be hazardous. Do not attempt to disassemble the unit The unit contains no user serviceable parts.Only factory service personnel may perform repairs.

- Connection to any other type of receptacle other than a two-pole,three-wire grounded receptacle may result in shock hazard as well as violate local electical codes.

- Do not allow liquids or any foreign object to enter the UPS.DO not place beverages or any other liquid-containing vessels on or near the unit.

- This unit intended for installation in a controlled environment (temperature controlled, indoor area free of conductive contaminants).Avoid installing the UPS in locations where there is standing or running water,or excessive humidity.

- Do not attach a power strip or surge suppressor to the UPS.

- Do not attach non-computer-related items,such as medical equipment,life-support equipment,microwave ovens,or vacuum cleaners to UPS.

- With the installation of the equipment it should be prevented, that the sum of the leakage current of the UPS and the connected consumer does not exceed 3.5mA.

⚠ Caution (for use)

Do not wet or pour water onto the unit.

- Doing so may cause an electric shock or a fire.
- If you wet the unit, stop using it and the unit must be inspected and/or repaired. For repair, contact us; ____

When the battery is dead, replace it immediately or stop using the unit.

- Continuing the use of it may cause a fire.

Ambient temperature	Expected life
20°C	4 to 5 years
30°C	2 to 2.5 years

* The values in the table are the expected life under standard use conditions and are not guaranteed.

Wipe the 100-VAC input plug clean of dirt with a dry cloth occasionally.

- Settled dust may cause a fire.

⚠ Caution (for use)

If you notice abnormal sound or smell, smoke, or leakage from the inside, immediately turn off the power switch and disconnect the AC input plug from a wall outlet (commercial power).

- Using the unit under such conditions may cause a fire.
- If you notice such a condition, stop using the unit and contact us at _____ for inspection and repairs.
- Use the unit under the conditions in which you can immediately disconnect the AC input plug from a wall outlet (commercial power) in the case of an abnormal event.

If fluid leaks from the unit, do not touch the fluid.

- Doing so may cause blindness or burns.
- If the fluid contacts your eyes or skin, wash it out with lots of clean water and consult your doctor.

⚠ Caution (for maintenance)

When maintaining the connected equipment, turn OFF the power switch and disconnect the AC input plug.

- Even if you disconnect the AC input plug while the UPS is operating, the power output of this unit does not stop and power is supplied from the outlet during a power failure.

Do not disassemble, repair, or modify the unit.

- Doing so may cause an electric shock or a fire.

If fluid leaks from the unit, do not touch the fluid.

- Doing so may cause blindness or burns.
- If the fluid contacts your eyes or skin, wash it out with lots of clean water and consult your doctor.

Do not throw the unit into fire.

- The lead battery in the unit may explode, or leak dilute sulfuric acid.

⚠ Caution (for battery replacement)

Perform replacement on a stable and flat place.

- Handle the battery carefully not to drop it.
- Not doing so could cause injury or burns due to liquid (acid) leakage.

Use a specified battery for replacement.

- Not doing so may cause a fire.
- Product model: BXB50F (battery pack for BX35F/BX50F/BX50FW)
  BXB75S (battery pack for BX75SW)

Do not replace the battery in a place where there is flammable gas.

- Spark may occur when connecting the battery, which may cause an explosion or fire.

If fluid (dilute sulfuric acid) leaks from the battery, do not touch the fluid.

- Doing so may cause blindness or burns.
- If it contacts your eyes or skin, wash it out with lots of clean water and consult your doctor.

Do not disassemble or modify the battery.

- Doing so could cause dilute sulfuric acid leak, which could cause blindness and burns.

Do not drop the battery or do not give strong impact on it.

- Dilute sulfuric acid may leak.

⚠ Caution (for battery replacement)

Do not short the battery with metal objects.

- Doing so could cause an electric shock, fire or burn.
- Some electrical energy still remains inside the spent battery.

Do not put the battery into fire or do not break it.

- The battery may explode or leak dilute sulfuric acid.

- A battery can present a risk of electrical shock and high short circuit current.The following precautions should be observed when working on batteries:
  1) Remove watches, rings, or other metal objects from the hands.
  2) Use tools with insulated handles.
  3) Wear rubber gloves and boots.
  4) Do not lay tools or metal parts on top of batteries.
  5) Disconnect charging source prior to connecting or disconnecting batteries terminals.
- Servicing of batteries should be performed or supervised by personnel knowledgeable of batteries and the required precautions. Keep unauthorized personnel away from batteries.

Notes

When moving the unit from a cold place to a warm place, leave it for several hours before using it.

- If the unit is moved to a warmer place and the power is turned on soon, the unit failure may occur due to condensation to the unit.

Charge the battery for at least 12 hours soon after purchasing the unit.

- If you do not use the unit for a long time after the purchase, the property of the battery may deteriorate and the battery may become unusable.
- To charge a battery, connect the AC input plug of the unit to a wall outlet (commercial power).

When storing the unit, charge the battery for at least 12 hours and turn off the power switch.

- Even if the unit is not used, the battery gradually discharges, and if it is left for a long time, it goes into an over discharge state.
  The backup time may become shorter or the battery may become unusable.
- The storable period of the built-in battery of the unit is 6 months after complete charging.
- If you want to store the battery longer than 6 months, connect the AC input plug of the unit to a commercial power wall outlet for at least 12 hours within 6 months.
- Turn off the power switch of the unit during storage.

Do not short the output lines of the unit each other and the output lines to the ground.

- The unit may fail.

Do not connect the AC input plug of the unit to its Power Supply Output Receptacle during the Battery Mode.

- The unit may fail.

Do not install or store the unit in a place exposed to direct sunlight.

- The rise of temperature may cause the built-in battery to deteriorate rapidly and become unusable.

Do not perform a withstand voltage test.

- The input circuit has a built-in surge absorption device. A withstand voltage test may break it.
- When performing an insulation resistance test, use the 250VDC range.

Notes

Before stopping the commercial power to the unit, turn OFF the power switch of the unit.

- The unit enters Battery Mode when commercial power is stopped. If you frequently use the unit in Battery Mode, the battery life may be significantly shortened.

Do not connect a page printer (laser printer, etc.) to the unit.

- The Commercial Power Mode and Battery Mode are repeated frequently, which may shorten the life of the battery.
- As the peak current of a page printer is large, an excess of the connection capacity or a power failure due to instantaneous voltage drop may be detected.

Do not use the unit for devices that malfunction due to an instantaneous power failure of 10msec (0.01 second) or less.

- The connected device may stop due to switching time of 10msec or less.

Do not use the unit for inductive devices such as fluorescent lamps.

- Connected devices may stop due to a rectangular wave output.
- Inductive devices include devices incorporating transformers, coils, motors, and so on for their input.

Do not fail to confirm the system operation beforehand if the unit is used combined with devices which power supply frequency fluctuate widely, such as private electric generator.

- This unit automatically recognizes the input power frequency when input power is supplied.
  If the unit is connected when the input power frequency is not stable at the rated level, the unit may misidentify the power supply frequency and may fail to operate normally.
  (If the unit is in operation, changing from commercial power supply to another power supply source, such as generating equipment, will cause no problem.)

Do not fail to confirm the system operation beforehand if the unit is used other than “Output 100V mode”. (for BX50FW/BX75SW only)

- At the time of battery operation, the maximum voltage (peak voltage) of output (rectangular wave) may be lower than the maximum voltage at the time of usual operation (commercial power supply). For this reason, some connected devices may fail to operate normally.

Battery recycling

- This unit uses lead acid batteries.
  The lead acid batteries are precious recyclable resources. Please cooperate recycling. For information on recycling, please contact our Electronic Systems & Equipments repair center.

Explanation

Usual operation

- You may either leave the power switch of the unit on (operation status) or turn it off each time when stopping the connected system. You can choose either of the operation methods for your convenience. We recommend turning off the power switch when you do not use connected devices for a long time.
- The battery is charged when the AC input plug of the unit is connected to a wall outlet (commercial power).

End of Battery Mode

- If a power failure lasts long, the battery discharges and power output from the unit stops. Shut down your computer after performing appropriate procedure (for example, saving data) while the unit supplies power.

Reboot

- If the battery discharges completely during a power failure, the unit stops. After the recovery from the power failure, the unit automatically restarts and supplies power. If you do not want to restart connected devices, turn off the power switch of either the unit or the connected devices.

1. Preparation

1-1 Checking the contents

Check whether all the package contents are included and there is no damage found on their appearance.
If you should notice defects or anything wrong, contact us; ____

(1) Accessories related to the main unit

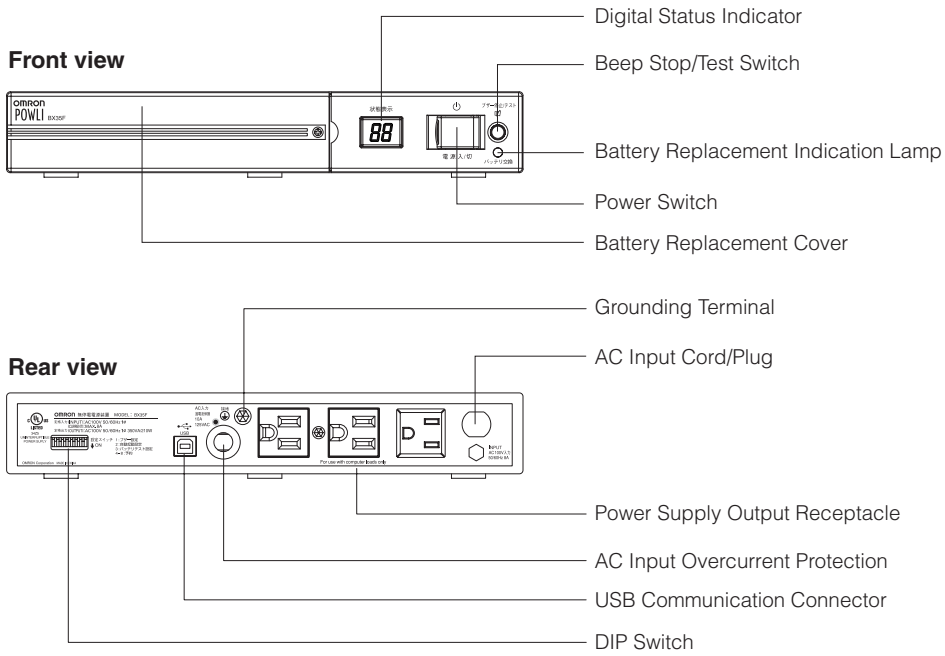
	BX35F	BX50F	BX50FW	BX75SW
User's manual	1	1	1	1
Warranty	1	1	1	1
User registration card	1	1	1	1
3P-2P conversion adaptor	1	1	1	1
Label (How to determine operating status)	1	1	1	1
Rubber feet	None	None	None	4
Vertical stand	1 set (2 pieces)	1 set (2 pieces)	1 set (2 pieces)	None

(2) UPS monitoring software

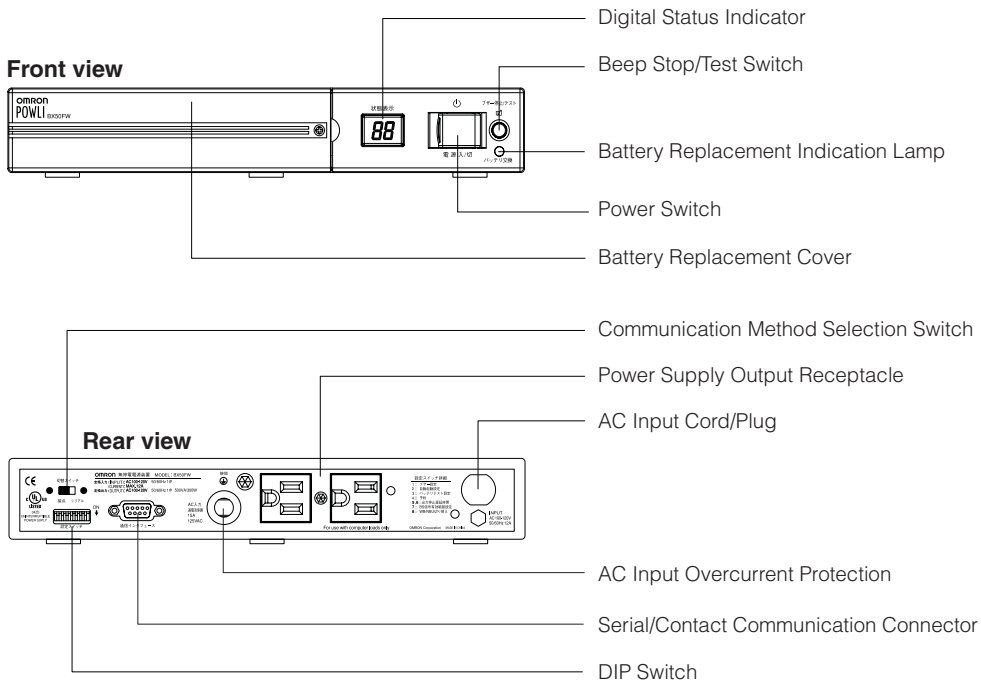
	BX35F	BX50F	BX50FW	BX75SW
User's manual	1	1	1	1
CD-ROM	1	1	1	1
Communication cable	1 (USB)	1 (USB)	1 (RS-232C)	1 (RS-232C)

1-2 Part names

BX35F/BX50F

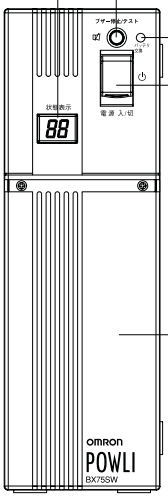


BX50FW

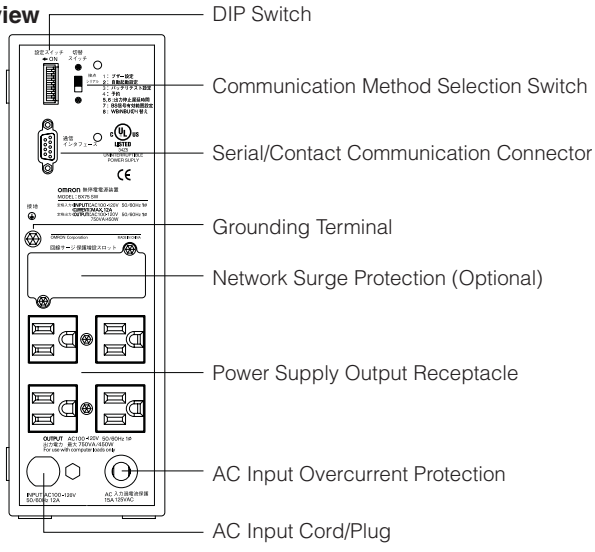


BX75SW

Front view



Rear view



1-3 Explanation of symbol used on unit

Symbol	Description
	Start the UPS.
	Stop the UPS.
	Suspend a beep.
	UPS output power enable, supplied by operating on line mode, battery mode.
	UPS has Error.

2. Installation and connection

2-1 Precautions and notes on installation and connection

⚠ Caution (for installation and connection)

Carry the unit considering its weight and balance, and place it on a stable and robust base.

- Dropping or toppling the unit may cause injury.
- The weight of this unit is approximately: 5 kg (BX35F/BX50F/BX50FW)/ 9 kg (BX75SW).
- If you drop the unit, stop using it and have an inspection and repair be done.
  For repair, contact us; ____

Keep plastic package bags out of reach of children.

- They may put their heads into it, and may be suffocated.

Make sure to connect the AC input plug of the unit into a wall outlet (commercial power) with rated input voltage.

- Connecting to a wall outlet (commercial power) of a different rated input voltage may result in fire.
- The unit may fail.

Do not connect devices such as dryers, which have a half-wave rectifier where only half-cycles of the AC power flows.

- Overcurrent may damage the UPS.

Connect the unit to a wall outlet (commercial power) with a current capacity of 8A or more (BX35F) or 12A or more (BX50F, BX50FW, and BX75SW).

- Otherwise, the power cord may be heated.
- When equipment with the maximum output capacity is connected, a maximum current of 8A or (BX35F) or 12A (BX50F, BX50FW, and BX75SW) flows.

Provide secure grounding.

- For a 3P wall outlet, directly connect the AC input plug of the unit to it. Not doing so may cause an electric shock in the case of unit failure or electric leakage.
- When you use a 3P-2P conversion plug for AC input plug, be sure to perform grounding before connecting the AC input plug into a wall outlet (commercial power).
  Do not disconnect the grounding before disconnecting the AC input plug from a wall outlet (commercial power).
- Grounding is necessary to enable its surge protection function.

Do not disassemble, repair, or modify the unit.

- Doing so may cause an electric shock or a fire.

Do not install the unit in other than specified orientations.

- Dropping or toppling the unit may cause injury.
- If you install the unit in an orientation other than specified, the unit cannot be protected from a battery fluid leakage.

When installing the unit vertically, do not put any object on it.
When installing the unit horizontally, do not put any object heavier than 25kg.

- Doing so may cause distortion of/damage to the case, which may cause a fire.
- When replacing the battery, remove objects that have been placed on the unit.

⚠ Caution (for installation and connection)

Do not use the unit where the maximum temperature exceeds 40°C.

- The battery becomes week rapidly, which may cause a fire.
- Doing so may cause a failure or malfunction of the unit. Do not install or store the product in the places listed below.

Do not install or store the unit in the places listed below.

- The humidity is lower than 25%. The humidity is higher than 85%. A closed place such as in a cabinet without clearance. There is flammable gas or corrosive gas. A place subject to vibration or shock. Outdoors.
- Installation or storing the unit in such a place may cause a fire.

Do not use the unit in a closed place or do not cover the unit.

- Doing so may cause abnormal heating or a fire.

Do not connect equipment that exceeds the output capacity of the unit.

- The current protection of the unit may operate, which may stop the output.
- The wiring of the plug strip heats up, which may cause a fire.

Do not pinch or tie the cable of the unit.

- Doing so may cause the cable to be damaged or heated, which may cause an electric shock or a fire.
- If the cable is damaged, stop using the unit and the cable must be repaired.
  For repair, contact us; ____

Do not connect devices that use power supply with an improved power factor.

- Overcurrent may damage the UPS.

All of the included accessories are designed to be used exclusively with the unit. Do not use the accessories with other devices.

- Doing so may compromise the safety of devices.

Notes

When moving the unit from a cold place to a warm place, leave it for several hours before using it.

- If the unit is moved to a warmer place and the power is turned on soon, the unit failure may occur due to condensation to the unit.

Charge the battery for at least 12 hours soon after purchasing the unit.

- If you do not use the unit for a long time after the purchase, the property of the battery may deteriorate and the battery may become unusable.
- To charge a battery, connect the 100 VAC input plug of the unit to a wall outlet (commercial power).

When storing the unit, charge the battery for at least 12 hours and turn off the power switch.

- Even if the unit is not used, the battery gradually discharges, and the battery is left for a log time, it goes into an over discharge state.
  The backup time may become shorter or the battery may become unusable.
- The storable period of the built-in battery of the unit is 6 months after complete charging.
- If you want to store the battery longer than 6 months, connect the AC input plug of the unit to a commercial power wall outlet for at least 12 hours within 6 months.
- Turn off the power switch of the unit during storage.

Notes

Do not short the output lines of the unit each other and the output lines to the ground.

- The unit may fail.

Do not connect the AC input plug of the unit to its Power Supply Output Receptacle during the Battery Mode.

- The unit may fail.

Do not connect a page printer (laser printer etc.) to the unit.

- The Commercial Power Mode and Battery Mode are repeated frequently, which may shorten the life of the battery.
- As the peak current of a page printer is large, an excess of the connection capacity or a power failure due to instantaneous voltage drop may be detected.

Do not use the unit for devices that malfunction due to an instantaneous power failure of 10msec (0.01 second) or less.

- The connected device may stop due to the switching time of 10msec or less.

Do not use the unit for inductive devices such as fluorescent lamps.

- Connected devices may stop due to a rectangular wave output.
- Inductive devices include devices incorporating transformers, coils, motors, and so on for their input.

Do not fail to confirm the system operation beforehand if the unit is used combined with devices which power supply frequency fluctuate widely, such as private electric generator.

- This unit automatically recognizes the input power frequency when input power is supplied.
  If the unit is connected when the input power frequency is not stable at the rated level, the unit may misidentify the power supply frequency and may fail to operate normally.
  (If the unit is in operation, changing from commercial power supply to another power supply source, such as generating equipment, will cause no problem.)

Do not install or store the unit in a place exposed to direct sunlight.

- The rise of temperature may cause the built-in battery to deteriorate rapidly and become unusable.

Do not perform a withstand voltage test.

- The input circuit has a built-in surge absorption device. A withstand voltage test may break it.
- When performing an insulation resistance test, use the 250 VDC range.

Before stopping the commercial power to the unit, turn OFF the power switch of the unit.

- The unit enters Battery Mode when commercial power is stopped. If you frequently use the unit in Battery Mode, the battery life may be significantly shortened.

Do not fail to confirm the system operation beforehand if the unit is used other than "Output 100V mode". (for BX50FW/BX75SW only)

- At the time of battery operation, the maximum voltage (peak voltage) of output (rectangular wave) may be lower than the maximum voltage at the time of usual operation (commercial power supply). For this reason, some connected devices may fail to operate normally.

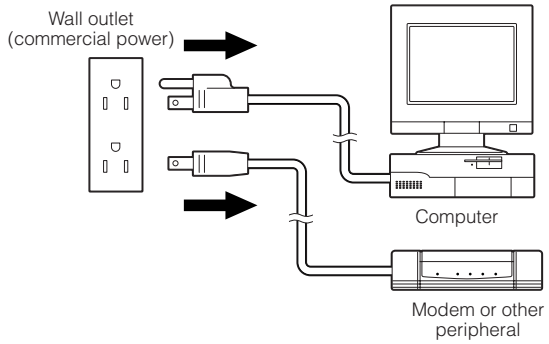
2-2 Installation and connection(BX35F/BX50F/BX50FW)

Connection to back up your computer and peripherals

Note

Before installing this device, make a record of the serial number of this device.
The serial number is required when contacting us about the device.
The serial number is written in the label on the unit.

(1) Disconnect all AC input plugs of your computer and peripherals from a wall outlet (commercial power).

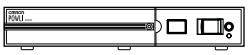


(2) Install the unit.

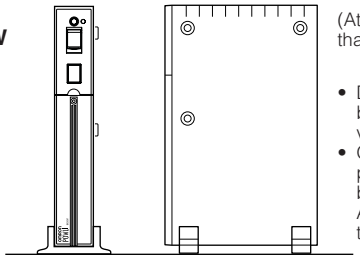
Write the usage start date on the label on the top side. Also, by using the included UPS monitoring software, possible to keep a record of usage start date by the software.

- Do not install the unit in any position other than those indicated below.

Horizontal BX35F/BX50F/BX50FW



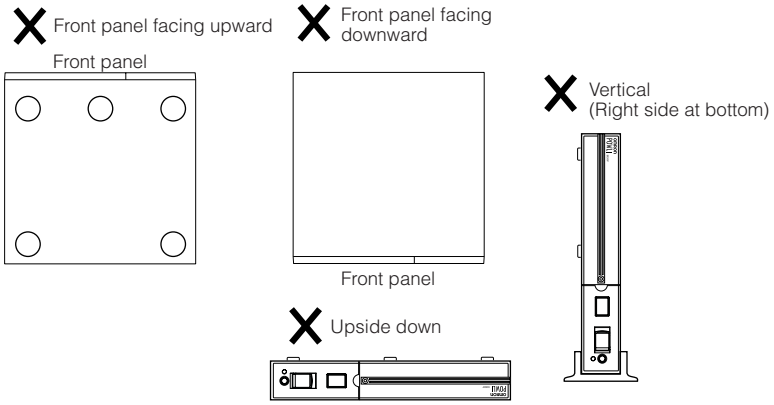
Vertical BX35F/BX50F/BX50FW



(Attach the included stand so that the left side is the bottom.)

- Detach the rubber feet from the bottom surface when positioning vertically.
- Once the rubber feet are removed, protrusions on the bottom surface will become visible.
  Align the stand with these protrusions to attach it.

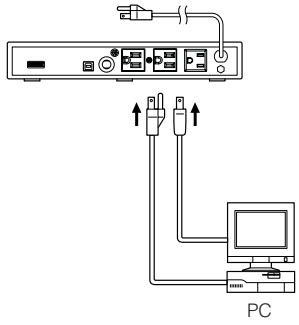
- Do not position the unit in the ways shown below.



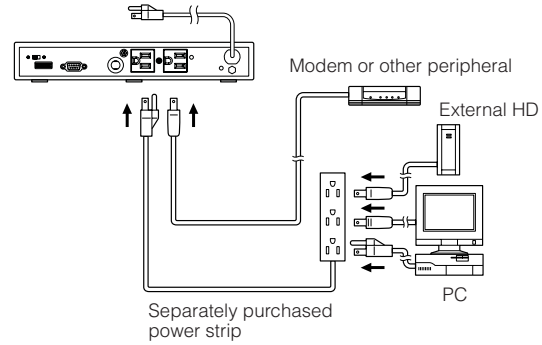
(3) Connect devices that require backup to the unit's power supply output receptacle.

When the unit's 3 output receptacles (the BX35F/50F has 3, the BX50FW has 2) are insufficient, increase the number of output receptacles by attaching a separately purchased power strip.

<Connection example 1>



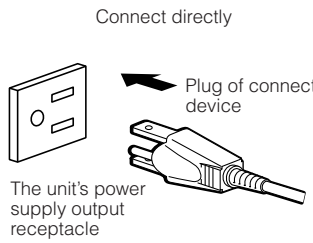
<Connection example 2>



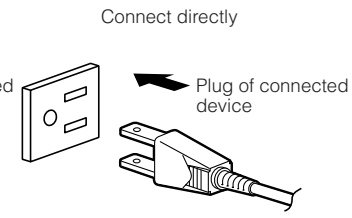
- Even when the connected device has a 2P AC input plug, it can be connected to the power supply output receptacle.

  However, when a 2P AC input plug has a ground wire, attach the ground wire to the grounding terminal (⏚) on the back of the unit.

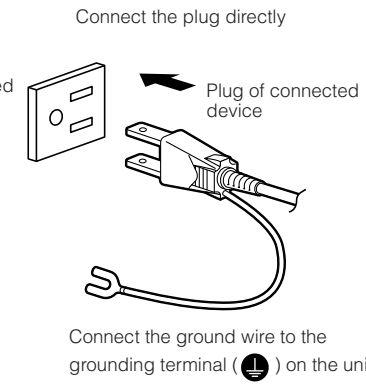
<When connected device has 3P plug>



<When connected device has 2P plug>



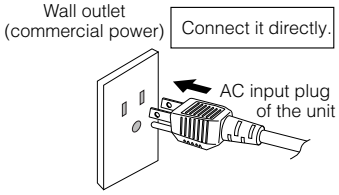
<When connected device has 2P plug + ground>



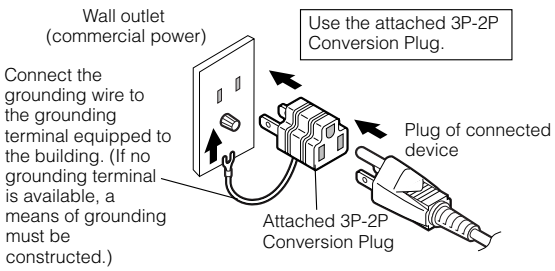
(4) When the installation and connection are complete, connect the AC input plug of this unit to a wall outlet (commercial power).

When you connect the AC input plug of this unit to a wall outlet (commercial power), battery charging automatically starts regardless of the on/off state of the Power Switch and charging completes within 12 hours.

< 3P wall outlet >



< 2P wall outlet >

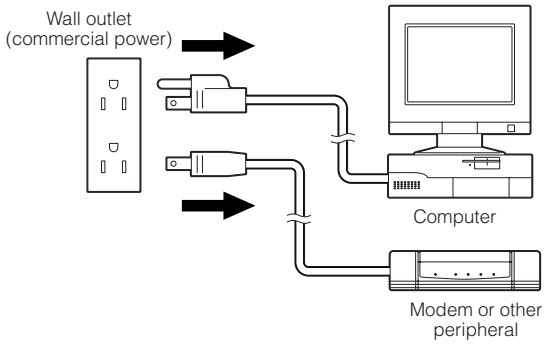


- This unit was charged before shipment, but if it is being used for the first time, the backup time may be reduced due to natural discharge. We recommend charging the unit before use.

2-3 Installation and connection (BX75SW)

Connection to back up your computer and peripherals

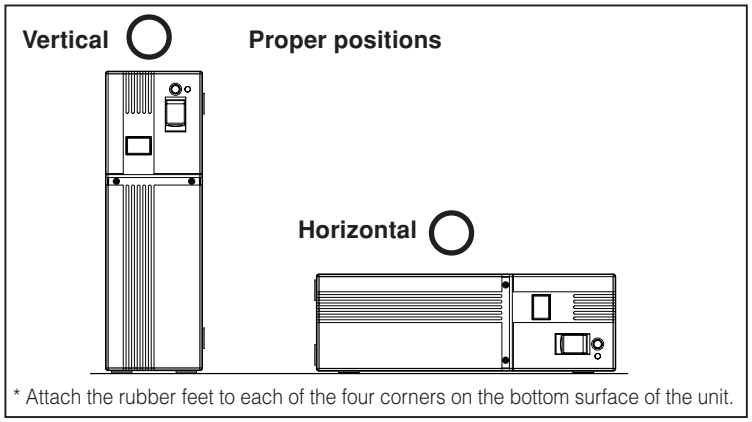
(1) Disconnect all computer and peripheral AC input plugs from the wall outlet (commercial power).



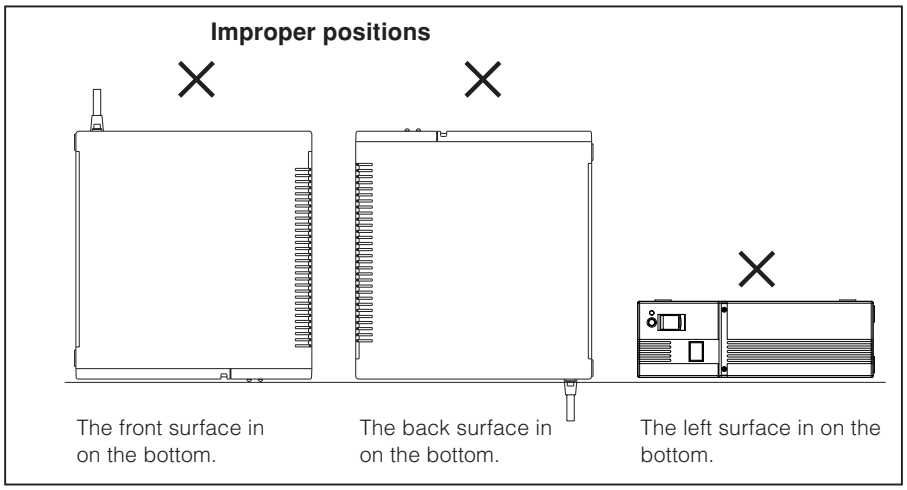
(2) Install the unit.

Write the usage start date on the label on the side. Also, by using the included UPS monitoring software, possible to keep a record of usage start date by the software.

● Do not use this unit in any position other than the “proper positions” indicated in the illustration below.

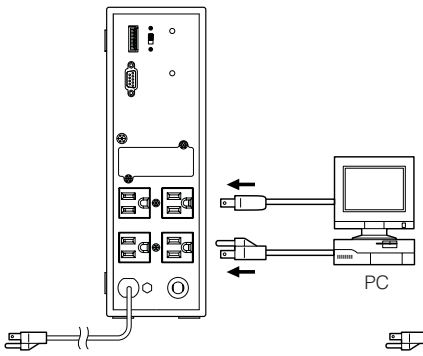


* Attach the rubber feet to each of the four corners on the bottom surface of the unit.

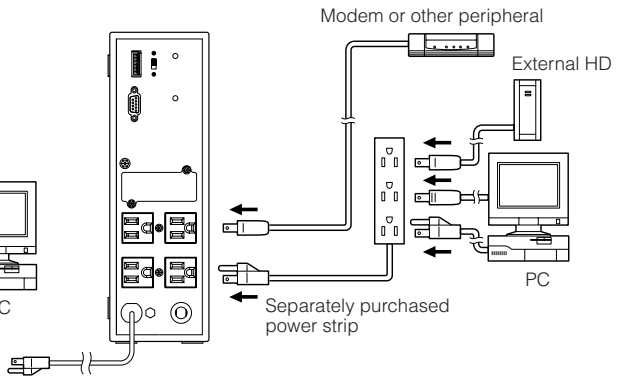


(3) Connect devices that require backup to the unit's power supply output receptacle.
A total of up to 750VA (7.5A) or 450W can be connected.

<Connection example 1>



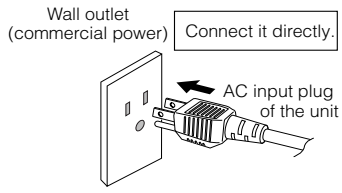
<Connection example 2>



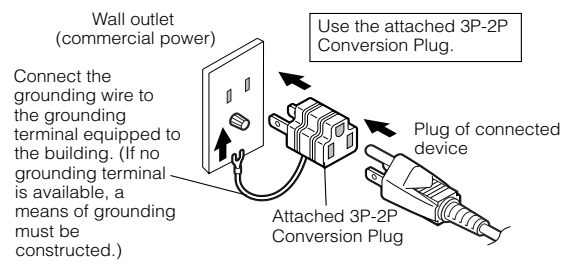
- Even when the connected device has a 2P AC input plug, it can be connected to the power supply output receptacle.
  However, when a 2P AC input plug has a ground wire, attach the ground wire to the grounding terminal (⏚) on the back of the unit.

(4) When installation and connection are complete, connect the unit's AC input plug to a wall outlet (commercial power).
When the AC input plug is connected to a wall outlet (commercial power), the battery automatically starts charging, taking up to 12 hours to complete.

< 3P wall outlet >



< 2P wall outlet >



- This unit was charged before shipment, but if it is being used for the first time, the backup time may be reduced due to natural discharge. We recommend charging the unit before use.

2-4 Checking the operation

When you are complete with connecting devices to the unit, the backup function must be confirmed.

Check that the Battery Mode is performed normally according to the following procedure.

This operation check simulates a power failure by disconnecting the AC input plug from a wall outlet.)

(1) Turn on the Power Switch of this unit.

The beeper sounds and the current settings are displayed on the LED.

After 5 secounds, the self-diagnostic test is performed in Battery Mode for approximately 10 seconds.

When the self-diagnostic test finishes successfully, switching to AC output from commercial power is performed and the following display is obtained.

(If the battery voltage is low, the self-diagnostic test is not performed and the operation starts immediately, using output from commercial power.)

Status indicator	Description
On	Power switch “ON” Operating normally

(2) Bring all the connected devices into operation.

(Including devices connected to the AC outlet of your PC.)

Operate the devices in a way in which abrupt power stop does not damage the connected devices, data, etc.

(3) Under this condition, check the LED display and a beep of this unit.

Are they in the same status as shown below?

Status indicator	On
Beep	None
Power supply output receptacles	Outputs power (connected devices are powered)

Are the same as shown above. ➜ The operation is normal. Proceed to (4).

Are not the same as shown above. ➜ The operation is abnormal. One of the description in "4. Display and beeps when there is an equipment failure" of "4-3 Interpreting a beep and display" on page 29 must apply.
Take necessary measures and then proceed to (4).

(4) Disconnect the AC input plug of this unit from a wall outlet (commercial power).

The UPS enters Battery Mode.

(5) In Battery Mode, check the LED display and a beep of the unit.

Are the LED display in the same status as A or B below?

(` ´ indicates blinking)

Status indicator	Beep	Output	Charging	Description
`bU´	Intermittent 4-second intervals	ON	OFF Discharging	Backup is operating due to power failure or AC input error. The battery will be depleted if backup operation continues.
`bL´	Intermittent 1-second intervals	ON	OFF Discharging	(Same as above.) Battery level is low, so output will stop soon.
`bE´	None	OFF	OFF Discharging	Battery is dead, so output stopped. (This is displayed only for a few seconds.)

Are not the same as shown above. ➜ Operation is abnormal. Check the status of lamps and beep and turn off the Power Switch.

- If the display is one of those shown in “4. Displays and beeps when there is an equipment failure” in “4-3 Interpreting beeps and displays” on page 29, take the necessary measures and then go back to (1) on page 23.
- If no Battery Mode is performed and the UPS and the connected devices stop, insufficient charging of the battery is suspected.

  Connect the AC input plug of the UPS to a wall outlet (commercial power), charge the battery for approximately 6 hours, and then go back to (4) on page 23.
- If the problem persists after checking the 2 points above, contact us; ____

(6) Connect the AC input plug to a wall outlet (commercial power) again.
The Status indicator stops blinking and turns on without intervals, and the beeper stops.
(The status is as shown below.)

Status indicator	Description
On	Power switch “ON” Operating normally

Checking the operation is now complete.

Installation and connection is now complete.

3. Preparation for operation

3-1 Charging the battery

When you connect the AC input plug of this unit to a wall outlet (commercial power), the battery charging automatically starts regardless of the on/off state of the Power Switch, and it is fully charged within 12 hours.

- This unit has been charged prior to shipment. However, the backup time becomes shorter when using it for the first time due to spontaneous discharge. We recommend charging this unit before using it.
- If you do not perform the initial backup time measurement described below in “3-2 Measuring the initial value of backup time”, proceed to “4. Operation”. → Page 26

3-2 Measuring the initial value of backup time

- When you measure the backup time initial value of the unit in your environment, this value can be used as a guide when checking the battery and deciding the UPS monitoring software setting values.

See also "7. Measuring the backup time" → Page 46

3-3 Recharging the battery

The battery is discharged completely when the backup time is measured, so you need to recharge it before using the UPS.

- You can use connected devices while recharging the battery, but the backup time when a power failure occurs is shorter until the battery is fully charged.
  (If a power failure occurs immediately after the start of charging, backup stops immediately.)

See also Charge the battery as described in "3-1 Charging the battery."

Preparation for starting operation is now complete.

4. Operation

4-1 Precautions and notes on operation

⚠ Caution (for use)

Do not wet or pour water onto the unit.

- Doing so may cause an electric shock or a fire.
- If you wet the unit, stop using it and the unit must be inspected and/or repaired. For repair, contact us; ____

When the battery is dead, replace it immediately or stop using the unit.

- Continuing the use of it may cause a fire.
- For more on how to check the battery, see “5. Maintenance and inspection” on page 36.
- For more on how to replace the battery, see“5-2 Replacing the battery” on page 37.

Ambient temperature	Expected life
20°C	4 to 5 years
30°C	2 to 2.5 years

* The values in the table are the expected life under standard use conditions and are not guaranteed.

Wipe the AC input plug clean of dirt with a dry cloth occasionally.

- Settled dust may cause a fire.

If you notice abnormal sound or smell, smoke, or leakage from the inside, immediately turn off the power switch and disconnect the AC input plug from a wall outlet (commercial power).

- Using the unit under such conditions may cause a fire.
- If you notice such a condition, stop using the unit and contact us at ____ for inspection and repairs.
- Use the unit under the conditions in which you can immediately disconnect the AC input plug from a wall outlet (commercial power) in the case of an abnormal event.

If fluid leaks from the unit, do not touch the fluid.

- Doing so may cause blindness or burns.
- If the fluid contacts your eyes or skin, wash it out with lots of clean water and consult your doctor.

Notes

Before stopping the commercial power to the unit, turn OFF the power switch of the unit.

- The unit enters Battery Mode when commercial power is stopped. If you frequently use the unit in Battery Mode, the battery life may be significantly shortened.

Explanation

Usual operation

- You may either leave the power switch of the unit on (operation status) or turn it off each time when stopping the connected system. You can choose either of the operation methods for your convenience. We recommend turning off the power switch when you do not use connected devices for a long time.
- The battery is charged when the AC input plug of the unit is connected to a wall outlet (commercial power).

End of Battery Mode

- If a power failure lasts long, the battery discharges and power output from the unit stops. Shut down your computer after performing appropriate procedure (for example, saving data) while the unit supplies power.

Reboot

- If the battery discharges completely during a power failure, the unit stops. After the recovery from the power failure, the unit automatically restarts and supplies power. If you do not want to restart connected devices, turn off the power switch of either the unit or the connected devices.

4-2 Start and stop procedures and basic operation

● When the AC input plug is connected to a wall outlet and the power switch is in the OFF position:

- The status indicator displays " ▬ ▬ ".
- Power output is stopped.
- The battery is charged automatically.

● Start procedure

Operation **Turn on the power switch of the UPS.**

- The details of the most recent error are displayed. (item 4 on page 29)
- The beeper sounds and the current setting is displayed on the status indicator.
  Cold start ON/OFF setting ➛ Output voltage setting.
- The status indicator displays " FU ", and the self-diagnostic test is performed in Battery Mode for about 10 seconds.
  (If the battery voltage is low, the self-diagnostic test is not performed. It is automatically executed after the battery is charged.)
- When the self-diagnostic test finishes successfully, switching to AC output from commercial power is performed and normal operation starts.
- If the self-diagnostic test is not executed, the UPS immediately starts outputting AC from commercial power.

Status indicator	On
Beep	None
Power supply output receptacles	Outputs power (connected devices are powered)

- During operation, the battery is charged automatically.

● Operation during a power failure

- If a power failure or abnormal input power supply occurs, the UPS automatically switches to Battery Mode, continuing power output from the Power Supply Output Receptacles supplied from the battery.
- The status is displayed and the beeper sounds intermittently to alert the user.

See also Setting switch 1 can be used to turn the beeper ON/OFF. ➛ Page 32

(` ´ indicates blinking)

Status indicator	Battery replacement	Beep	Output	Charging	Description	Solution
	○	Intermittent 4-second intervals	ON	OFF Discharging	Backup is operating due to power failure or AC input error. The battery will be depleted if backup operation continues.	Perform shutdown operations for the connected devices and stop them.
	○	Intermittent 1-second intervals	ON	OFF Discharging	(Same as above.) Battery level is low, so output will stop soon.	(Same as above.)
	○	None	OFF	OFF Discharging	Battery is dead, so output stopped. (This is displayed only for a few seconds.)	Charge the battery.

● Operation during recovery from a power failure

- If a power failure or abnormal power input is resolved while the UPS supplies power, it returns to the commercial power output status automatically. Charging the consumed battery starts.
- If a power failure or abnormal power input is resolved after the battery is discharged completely and power output is stopped, the UPS restarts automatically and resumes power output. Charging the consumed battery starts.

● Stop procedure

Operation **Turn on the power switch of the UPS.**

- The power output from the UPS stops.

Status indicator	Battery replacement	Beep	Output	Charging	Description
- -	○	None	OFF	ON	There is AC input Power switch “OFF”

- Even if you turn off the power switch, if 1AC is supplied from commercial power, the battery is automatically charged.

4-3 Interpreting beeps and displays

1. Displays and beeps during normal operation

`` `` indicates blinking

No.	Status indicator	Battery replacement	Beep	Output	Charging	Description	Solution
1		○	None	OFF	OFF	No AC input Operation stopped	—
2		○	None	OFF	ON	There is AC input Power switch “OFF”	—
3		○	None	ON	ON	Power switch “ON” Operating normally	—

2. Displays and beeps while testing

4		○	None	ON	OFF Discharging	Self-diagnostic test in progress	—
5		○	None	ON	OFF Discharging	Auto battery test in progress	—

3. Displays and beeps during power failure or AC input error

6		○	Intermittent 4-second intervals	ON	OFF Discharging	Backup is operating due to power failure or AC input error. The battery will be depleted if backup operation continues.	Perform shutdown operations for the connected devices and stop them.
7		○	Intermittent 1-second intervals	ON	OFF Discharging	(Same as above.) Battery level is low, so output will stop soon.	(Same as above.)
8		○	None	OFF	OFF Discharging	Battery is dead, so output stopped. (This is displayed only for a few seconds.)	Charge the battery.
9		○	None	OFF	(ON)	AC input voltage or frequency is too high (over) Power switch “OFF”	Use within the input voltage/frequency range described in the specifications.
10		○	None	OFF	(ON)	AC input voltage or frequency is too low (under) Power switch “OFF”	(Same as above.)

4. Displays and beeps when there is an equipment failure

11		○	Intermittent 0.5-second intervals	ON	ON, or Discharging	There are too many connected devices and the rated capacity is exceeded. If this status continues for 5 minutes or more, the status No. 12 occurs and output stops.	Reduce the number of connected devices until the display appears as in status No. 3.
12		○	Continuous	OFF	ON, or Discharging	Stopped due to excess connection capacity. When the connection capacity is 120% or more, the unit immediately enters this status without first entering status No. 11.	Turn OFF this unit and all connected devices. Reduce the number of connected devices, and then turn ON this unit and the connected devices.

4. Displays and beeps when there is an equipment failure (continued)

`` ` ´ `` indicates blinking

No.	Status indicator	Battery replacement	Beep	Output	Charging	Description	Solution
13	E5	○	Continuous	OFF	ON, or Discharging	Stopped because of output short-circuit.	Check that the AC input of connected devices is not short-circuited.
14	EE	○	Continuous	OFF	—	Stopped because of failure.	Turn OFF this unit and all connected devices. Then, turn the power switch back ON for this unit only. If the display does not change, there is a problem with the UPS. Contact the shop of purchase or our Electronic Systems & Equipments customer support center at: _____.
15	E1	○	Continuous	OFF	—	Stopped because of output voltage error (over).	Details of error are displayed only when the “Beeper stop” switch is pressed while in status No. 14.
16	E2	○	Continuous	OFF	—	Stopped because of output voltage error (under).	(Same as above.)
17	E3	○	Continuous	OFF	—	Stopped because of battery charge voltage error (over).	(Same as above.)
18	E4	○	Continuous	OFF	—	Stopped because of battery charge voltage error (under).	(Same as above.)
19	E6	○	Continuous	OFF	—	Stopped because of abnormal internal temperature.	(Same as above.)

5. Display and beep for battery replacement

20	On	●	Intermittent 2-second intervals	ON	ON	The battery test detected a weak battery.	Charge the battery. You can replace the weak battery with a separately purchased replacement battery as needed.

6. UPS operation mode setting display

21	C1	—	—	—	—	Cold start ON setting UPS can start up even when there is no AC input	—
22	C0	—	—	—	—	Cold start OFF setting UPS can start up only when there is AC input	—
23	00	—	—	—	—	Output 100V mode Output voltage is 100V (effective value)	—
24	10	—	—	—	—	Output 110V mode Output voltage is 110V (effective value)	—
25	15	—	—	—	—	Output 115V mode Output voltage is 115V (effective value)	—
26	20	—	—	—	—	Output 120V mode Output voltage is 120V (effective value)	—

4-4 Suspending a beep

You can suspend a beep by pressing and holding the Beep Stop/Test Switch while a beep is sounding for 0.5 second or longer.

4-5 Description of the self-diagnostic test function

You can use the following procedure to check whether a failure occurs inside the unit and whether replacing the battery is required.

If the battery is not fully charged, the self-diagnostic test is not executed immediately.
After charging is complete, it is automatically executed.

(1) Connect your computer and other devices to the UPS and then turn on the power switch of the UPS.

(2) Press and hold the Beep Stop/Test Switch of the UPS for 0.5 second or longer.

Release the Beep Stop/Test Switch when a beep sounds. The Battery Mode starts for testing purpose. (No beep sounds.) When the test is complete, the normal operation automatically starts.

(3) If the status indicator/battery replacement lamp blinks and the beeper sounds:

See also "4-3 Interpreting a beep and display" ➛ Page 29

Follow the directions for the solutions described in “4. Displays and beeps when there is an equipment failure” and “5. Display and beep for battery replacement”.

4-6 Description of the auto battery test function

This UPS provides functions to automatically check whether replacing the battery is required and whether the internal circuit is at fault. (You do not have to perform any operation.)

The test is performed at intervals of 4 weeks after the AC Input Plug is connected to a wall outlet (commercial power).

The test is not performed if the power switch is OFF or if the battery is not fully charged.

(1) When the auto battery test starts, the Battery Mode automatically starts. (No beep sounds.) After the auto battery test is complete, the normal operation automatically starts.

(2) If the status indicator/battery replacement lamp blinks and the beeper sounds:

See also "4-3 Interpreting a beep and display" ➛ Page 29

Follow the directions for the solutions described in “4. Displays and beeps when there is an equipment failure” and “5. Display and beep for battery replacement”.

The setting switch on the rear of the UPS allows you to select the "disable the auto battery test" setting.

See also "4-7 Changing the setting of the functions" ➛ Page 32
See "●Auto battery test ON/OFF setting."

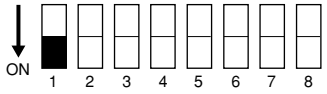
4-7 Changing the setting of the functions

1. Selecting functions with the setting switches

Operation **After changing the setting switches, turn ON the power switch again while the AC input plug is connected to a wall outlet (commercial power).**

- Otherwise, the change will not take effect.

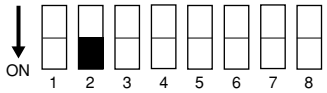
● Power output stop delay time setting (setting switch 1) ··· Factory-shipped setting: OFF



OFF: The beeper sounds when an alarm is necessary.

ON: The beeper does not sound for backup operation or battery replacement. The beeper sounds for other errors (connection capacity exceeded, operation error, etc.).

● Auto restart setting (setting switch 2) ··· Factory-shipped setting: OFF



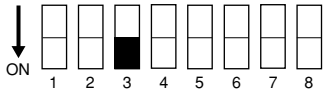
OFF: Automatically restarts when power is restored.

After a power failure occurs and the unit shuts down using the shutdown software or contact signal, the unit automatically starts and begins to output when the commercial power is restored.

ON: Does not automatically restart when power is restored.

After the unit shuts down using the shutdown software or contact signal, it does not start up when commercial power is restored. Startup is performed manually by turning the power switch OFF once, and then back ON again.

● Auto battery test ON/OFF setting (setting switch 3) ··· Factory-shipped setting: OFF

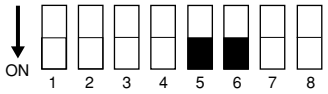


OFF: The battery test is automatically executed at intervals of 4 weeks.

ON: The auto battery test is disabled.

Use this setting to disable Battery Mode in for the regularly performed auto battery test.

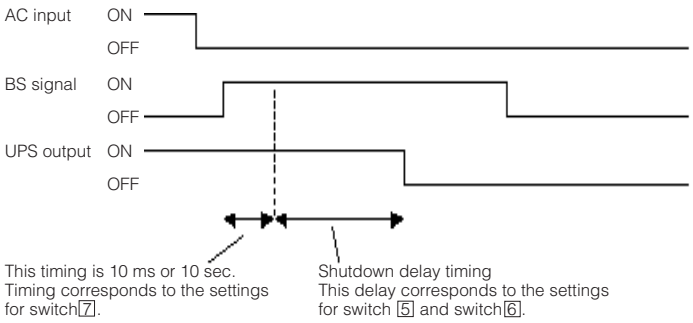
● **Power output stop delay time setting (setting switches 5 and 6) ··· <u>Factory-shipped setting: OFF and OFF</u> (Only for BX50FW and BX75SW)**



Setting switch 5	Setting switch 6	Power output stop delay time
OFF	OFF	0 second
ON	OFF	60 seconds
OFF	ON	120 seconds
ON	ON	Does not stop power output

The UPS delays the shutdown timing.

If the user sets “switch 5: ON, switch 6: ON”, the UPS does not stop the output, even if the backup stop (BS) is valid.

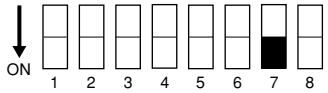


<Note>

The remote ON/OFF signal is not related to this setting.

When the remote ON/OFF signal is “High”, the UPS stops the output immediately.

● **UPS stop signal setting (setting switch 7) ··· Factory-shipped setting: OFF (Only for BX50FW, BX75SW)**



OFF: The unit's power output can be stopped by inputting a "High" backup power supply stop signal (BS) that continues for 10 seconds or more. The power supply output is stopped with a voltage signal input, even in commercial operation.

After stopping power output, a "Low" backup power supply stop signal (BS) restarts the unit once the commercial power supply is normal. However, it does not restart if the automatic restart setting (setting switch 2) is ON.

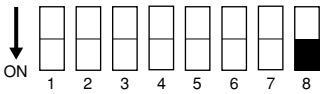
ON: The unit's power output can be stopped by inputting a "High" backup power supply stop signal (BS) that continues for 0.01 (10 ms) seconds or more. Power supply output can be stopped when the stop signal is received, only during backup operation (Battery Mode).

After stopping power output, a "Low" backup power supply stop signal (BS) restarts the unit once the error that caused the power failure is eliminated.

Use this setting in commercial operation when you do not want to stop operations when a backup power supply stop signal (BS) is received.

● **Communication connector 9th-pin output signal switching setting (setting switch 8) ···Factory-shipped setting: OFF (Only for BX50FW, BX75SW)**

* Valid only when using contact signal interface.



OFF: Outputs a signal when a deteriorated battery needs to be replaced (WB signal)

ON: Outputs the BU inversion signal

2. Switching switch (Only for BX50FW, BX75SW)

Caution

- Before operating the switching switch, turn OFF the power switch of the main unit and unplug the AC input plug (turn OFF the AC input).
- If the switching switch is changed during operation, communication with peripherals (PC, etc.) will cease to perform normally.
- If the AC input plug is not disconnected, the switching switch setting changes will not become valid.

Use when switching the communication interface (serial communication, contact communication).

3. UPS operation mode settings

The settings available for this operation are shown below.

- Cold start ON/OFF setting
  When ON, it is possible to start up the unit even when there is no AC input plug.
  (It is not possible, however, to start up the unit by the remote signals.)
- Output voltage setting (100V/110V/115V/120V)
  Four types of output voltage can be set. (Applicable only for BX50FW and BX75SW)

3-1. The UPS operation mode can be set if the power switch is turned ON while the beeper stop switch is pressed.

Note: While in setting mode, output from the output receptacles are OFF, even if the power switch is ON.

How to make settings:

There are 2 items to select.

1) Cold start ON/OFF setting
2) Output voltage setting (only for BX50FW, BX75SW)

(1) When the beeper stop switch is pressed (for less than 3 seconds), the next item is displayed.

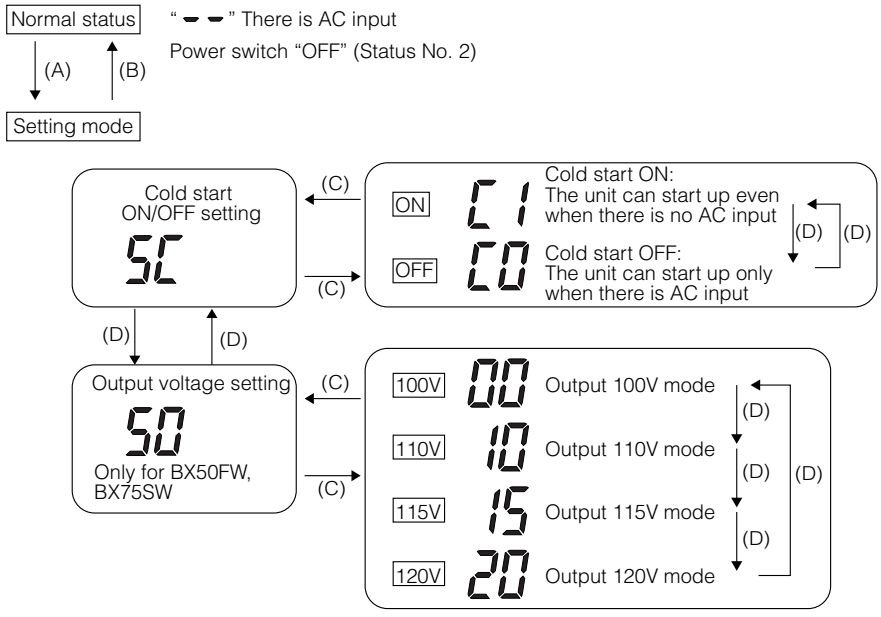
Cold start ON/OFF setting → Output voltage setting

(2) Setting mode starts if the beeper stop switch is held (for more than 3 seconds).

(3) When the power switch is turned OFF, setting mode quits and it returns to normal status (Status No.2).

Note: The output voltage setting is disabled for the BX35F and BX50F.

(Example: When making output power supply settings, selection between 110V/115V/120V modes is not possible. Only 100V mode is possible.)



(A) Turn ON the power switch while the beeper stop switch is pressed.
(B) Turn OFF the power switch.
(C) Press and hold the beeper stop switch (for more than 3 seconds).
(D) Press the beeper stop switch (for less than 3 seconds).

5. Maintenance and Inspection

⚠ Caution (maintenance)

When maintaining the connected equipment, turn OFF the power switch and disconnect the AC input plug.

- Even if you disconnect the AC input plug while the UPS is operating, the power output of this unit does not stop and power is supplied from the outlet during a power failure.

Do not disassemble, repair, or modify the unit.

- Doing so may cause an electric shock or a fire.

If fluid leaks from the unit, do not touch the fluid.

- Doing so may cause blindness or burns.
- If the fluid contacts your eyes or skin, wash it out with lots of clean water and consult your doctor.

Do not throw the unit into fire.

- The lead battery in the unit may explode, or leak dilute sulfuric acid.

5- 1 Checking the battery

The sealed lead battery used in the unit has a limited life.
(The life varies depending on your storage/use environment and backup frequency.)
The nearer the end of the life is, the more rapidly deterioration proceeds.

1. Life of battery (estimated replacement timing)

Ambient temperature	Life of battery	Replacement estimation
20°C	4 to 5 years	4 to 5 years after staring use
30°C	2 to 2.5 years	2 years after staring use

2. Method to check the battery

There are 3 methods for checking the battery.

- Perform a self-diagnostic test. (See page 31.)
- Use the auto battery test function. (See page 31.)
- Measure the backup time. (See page 46.)

By measuring the backup time, the battery life can be determined more accurately.

See also Measure the backup time according to "7-1 Measuring method of the backup time." ➛ Page 46

If the measured value is equal to the "initial value of the backup time" or less than half the value obtained from the graph of "Estimated backup time" on page 46, replace the battery.

- When you compare the "initial value of the backup time" you measured and the current backup time, make the capacity of devices connected to the UPS same as when you measured the initial value to make judgment accurately.

3. Guideline on the frequency of checking the battery (measuring the backup time)

Ambient temperature	Check at intervals of 6 months	Check at intervals of 1 month
20°C	Until 3 years from purchase	From after 3 years
30°C	Until 1.5 years from purchase	From after 1.5 years

*** The battery deteriorates even if it is stored. The higher the temperature is, the shorter the life becomes.**

5-2 Replacing the battery

The battery can be replaced either while the unit is stopped (power supply output stopped) or while it is in operation (outputting power supply).

⚠ Caution

When the unit is used in compliance with UL standards, do not replace the battery while in operation (while power is being output). Replacing the battery while in operation does not comply with UL standards. Make sure to stop the operation of the unit before replacing the battery.

* When replacing the battery, stop the connected devices, turn OFF the power switch of the UPS, and disconnect the AC input plug from the wall.
* If an input power supply error such as a power failure occurs when replacing the battery while in operation, backup cannot be performed and output stops.
* Do not replace the battery during backup operation. Output will stop.

⚠ Caution (for battery replacement)

Perform replacement on a stable and flat place.

- Handle the battery carefully not to drop it.
- Not doing so could cause injury or burns due to liquid (acid) leakage.

Use a specified battery for replacement.

- Not doing so may cause a fire.
- Product model: BXB50F (battery pack for BX35F/BX50F/BX50FW)
  BXB75S (battery pack for BX75SW)

Do not replace the battery in a place where there is flammable gas.

- Spark may occur when connecting the battery, which may cause an explosion or fire.

If fluid (dilute sulfuric acid) leaks from the battery, do not touch the fluid.

- Doing so may cause blindness or burns.
- If it contacts your eyes or skin, wash it out with lots of clean water and consult your doctor.

Do not disassemble or modify the battery.

- Doing so could cause dilute sulfuric acid leak, which could cause blindness and burns.

Do not drop the battery or do not give strong impact on it.

- Dilute sulfuric acid may leak.

Do not short the battery with metal objects.

- Doing so could cause an electric shock, fire or burn.
- Some electrical energy still remains inside the spent battery.

Do not put the battery into fire or do not break it.

- The battery may explode or leak dilute sulfuric acid.

⚠ Caution (for battery replacement)

- A battery can present a risk of electrical shock and high short circuit current.The following precautions should be observed when working on batteries:
  1) Remove watches, rings, or other metal objects from the hands.
  2) Use tools with insulated handles.
  3) Wear rubber gloves and boots.
  4) Do not lay tools or metal parts on top of batteries.
  5) Disconnect charging source prior to connecting or disconnecting batteries terminals.
- Servicing of batteries should be performed or supervised by personnel knowledgeable of batteries and the required precautions. Keep unauthorized personnel away from batteries.

Notes

Battery recycling

This unit uses lead acid batteries.
The lead acid batteries are precious recyclable resources. Please cooperate recycling.
For information on recycling, please contact our Electronic Systems & Equipments repair center.

Pb

5-2-1 Battery replacement procedure (BX35F/BX50F/BX50FW)

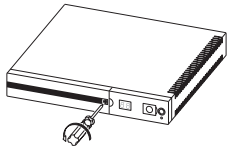
● Preparation

(1) Purchase a BXB50F spare battery pack (sold separately).

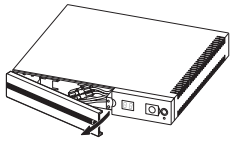
(2) If you place the UPS horizontally and put a heavy object such as CRT on it, put it down until you finish replacement.

● Replacing the battery (BX35F/BX50F/BX50FW)

(1) Open the front panel.

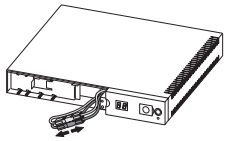


Use a screwdriver to remove the screw (1).

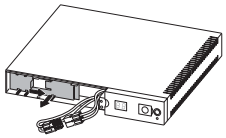


Detach the front panel.

(2) Disconnect the battery connector and remove the metal cover.



(Disconnect the red and black connectors. Hold one connector in each hand and pull them apart.)

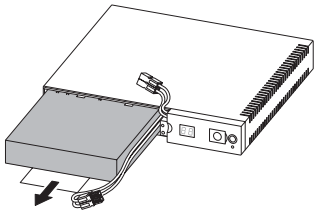


(1) Slide the front metal cover to the right, and
(2) Pull it toward you to remove it.

(3) Remove the old battery, and insert the new battery.

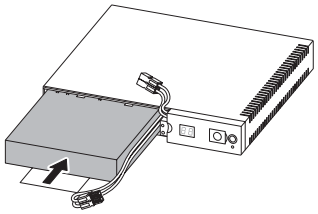
⚠ Caution

- **If liquid (dilute sulfuric acid) leaks from the battery do not touch the fluid. Do not make the batter pack upside down.**
  - Doing so could cause burns and, if it is put into your eye, blindness.
  - If the liquid touches your eyes or skin, wash it out with lots of clean water and consult your doctor.
  - Just put the spare batter pack into the packaging plastic bag and seal it with tape.
- **Do not drop the battery pack.**
  - Hold the battery securely not to drop it.
- **Do not remove the battery by holding the cables.**



Pull on the white label attached to the battery, and then hold the battery with your hands to remove it.

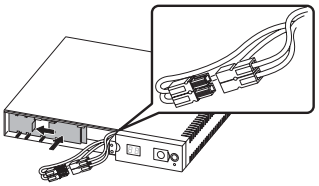
⚠ Be careful not to drop the battery.



Insert the new battery.

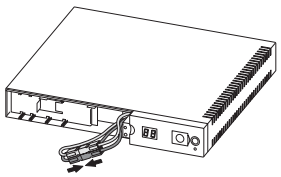
(4) Reattach the metal cover and connect the connectors.

- You may hear a “pop” sound when you connect the battery if it is replaced after the unit’s operation is stopped, but this is not abnormal.



Fit the metal cover into the grooves and slide it to the left to secure it.

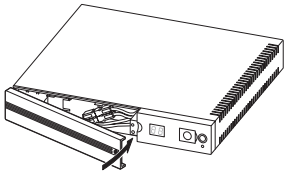
(The battery is secured inside the case.)



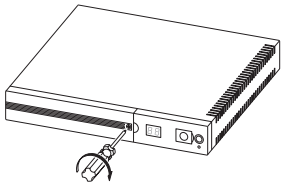
Connect the red and black connectors.

(Make sure that the connectors are securely connected.)

(5) Reattach the front panel.



Fit the left side of the panel on the case, and then attach it.



Tighten the screw with a screwdriver to secure the front panel.

<After replacing the battery during operation...>

Press the beeper stop/test button for 0.5 sec. to perform a self-diagnostic test. Normal operation resumes after the 10-second test. If the beeper is sounding, it will stop the first time the switch is pressed. Press the switch again to start the test. If the battery replacement display and beeper were activated before replacing the battery, the display and beeper stop after the test is complete, and normal operation resumes.

<After replacing the battery when operation was stopped...>

Connect the AC input plug to a wall outlet (commercial power) and turn ON the power switch of the UPS. When operation starts, the self-diagnostic test is automatically performed. Normal operation resumes after the 10-second test.

Battery replacement is complete.

Write the usage start date on the label on the top side. Also, by using the included UPS monitoring software, possible to keep a record of usage start date by the software.

5-2-2 Replacing the battery (BX75SW)

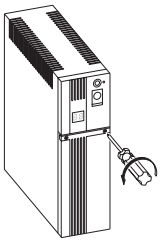
● Preparation

(1) Purchase a BXB75S spare battery pack (sold separately).

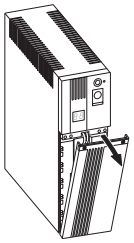
(2) If you normally position the UPS horizontally and place a heavy object such as a CRT on top of it, remove the object until you finish replacing the battery.

● Replacing the battery (BX75SW)

(1) Open the front panel.

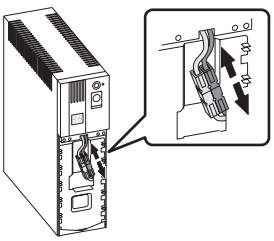


Loosen and remove the 2 screws.



Detach the front panel.

(2) Disconnect the battery connector and remove the metal cover.



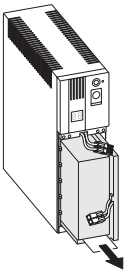
(Hold one connector in each hand and pull them apart.)

(1) Slide the front metal cover upward, and
(2) Pull it toward you to remove it.

(3) Hold the label stuck to the battery pack and remove it.
Insert the new battery pack.

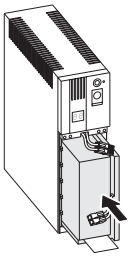
⚠ Caution

- **If liquid (dilute sulfuric acid) leaks from the battery do not touch the fluid. Do not make the batter pack upside down.**
  - Doing so could cause burns and, if it is put into your eye, blindness.
  - If the liquid touches your eyes or skin, wash it out with lots of clean water and consult your doctor.
  - Just put the spare batter pack into the packaging plastic bag and seal it with tape.
- **Do not drop the battery pack.**
  - If you see red tape stuck on the top of the battery pack, you can remove the battery completely by pulling it 10 cm further.
    Hold the battery securely not to drop it.
- **Do not remove the battery by holding the cables.**



Pull on the white label attached to the battery, and then hold the battery with your hands to remove it.

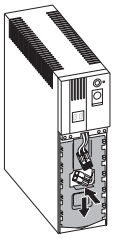
⚠ Be careful not to drop the battery.



Insert the new battery pack.

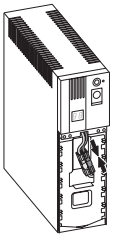
(4) Reattach the metal cover and connect the connectors.

You may hear a "pop" sound when you connect the battery if it is replaced after the unit's operation is stopped, but this is not abnormal.



Fit the metal cover into the grooves and slide it downward to secure it.

(The battery is secured inside the case.)

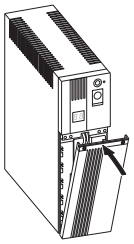


Connect the red and black connectors.

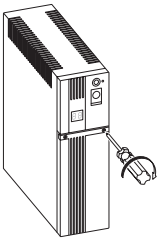
(Make sure that the connectors are securely connected.)

(5) Fit the front panel.

Turn the 2 screws to secure the font panel clockwise with a screwdriver.



Fit the front panel.



Tighten the 2 screws.

<After replacing the battery during operation...>

Press the beeper stop/test button for 0.5 sec. to perform a self-diagnostic test. Normal operation resumes after the 10-second test. If the beeper is sounding, it will stop the first time the switch is pressed. Press the switch again to start the test. If the battery replacement display and beeper were activated before replacing the battery, the display and beeper stop after the test is complete, and normal operation resumes.

<After replacing the battery when operation was stopped...>

Connect the AC input plug to a wall outlet (commercial power) and turn ON the power switch of the UPS. When operation starts, the self-diagnostic test is automatically performed. Normal operation resumes after the 10-second test.

Battery replacement is now completed.

Write the usage start date on the label on the side. Also, by using the included UPS monitoring software, possible to keep a record of usage start date by the software.

5-3 Cleaning

● Cleaning the UPS

Wipe the UPS lightly by tight squeezed soft cloth soaked with water or detergent

Do not use chemicals such as thinner and benzene. (They cause deformation or discoloration.)

● Removing dust from the Power Plug

- Turn off connected devices and the Power Switch of the UPS.
- Disconnect the AC Input Plug from a wall outlet (commercial power) and remove dust around the plug with a dry cloth.
- Disconnect the AC Input plugs of the connected devices from the UPS and clean them also.
- Connect the AC Input plugs of the connected devices to the UPS again, and connect the AC Input Plug of the UPS to a wall outlet (commercial power).

  (For information on the connection procedure:)

See also "2-2 Installation and connection" ➛ Page 18

6. Using the Contact Signal (only for BX50FW, BX75SW)

You can develop your unique system based on the following specifications to automate the process at the power failure.

Your can perform power-failure or closing procedure of the system by detecting the Backup Signal and the Battery Low Signal, or receive failure notification by detecting the Trouble Signal.

You can stop the UPS by inputting the UPS Stop Signal from the system, and remote control start and stop of the UPS by using the Remote ON/OFF Signal.

Also, this function is valid only when “connection communication” is selected for the “switching switch”. (See item 2 on page 34.)

1. Signal output

The UPS has 5 kinds of output signals. The output circuit consists of an open collector circuit using a photo coupler (a kind of electronic switch).

- **Backup Signal output: BU**
  Backup Signal reverse output: NBU

  BU stays ON (NBU OFF) during a power failure.

  NBU is output only when the”gcommunication connector 9th-pin output signal switching setting” (setting switch 8) is set to ON.

BU-COM	ON when a power failure occurs
NBU-COM	OFF when a power failure occurs

- **Battery Low Signal output: BL**

  Goes ON when the battery becomes weak during the Battery Mode.

BL-COM	ON when the battery is low

- **Trouble Signal output: TR**

  Goes ON when an internal failure of the UPS occurs.

TR-COM	ON when a power failure occurs

- **Battery Replacement Signal output (WB)**

  Goes ON when the battery needs to be replaced due to deterioration.

  WB is output only when the “communication connector 9th-pin output signal switching setting” (setting switch 8) is set to OFF.

WB-COM	ON when battery deterioration is detected

2. Input of the UPS Stop Signal (BS)

Stops the output of the UPS after the time period specified by the “power output stop delay time setting” (setting switches 5 and 6) has elapsed.

BS-COM	UPS stops

(1) When the "UPS Stop Signal setting" (setting switch 7) is set to OFF:

You can stop the output of the UPS by inputting the voltage signal (HIGH) that lasts at least 10 seconds from the outside.

(2) When the "UPS Stop Signal setting" (setting switch 7) is set to ON:

You can stop power output by inputting the voltage signal (HIGH) that lasts at least 0.01 second (10 ms) from the outside that is accepted only during backup.

See also "4-7 Changing the setting of the functions" ➛ Pages 32

3. Remote ON/OFF Signal

You can start and stop the UPS by the remote ON/OFF signals, by the contact connected to the outside, or the ON/OFF status of the open collector circuit. To use this function, turn on the Power Switch of the UPS. (Note: When there is no AC power supply, it is not possible to start up UPS by the remote ON/OFF signals even though cold start is set ON.)

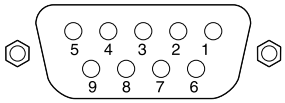
External contact	Operate
Open	Start
Close	Stop

4. Connection to the system

Please make a cable to connect to the system by yourself.

See also "8. Example of the use of the Contact Signal circuit" ➛ Page 45

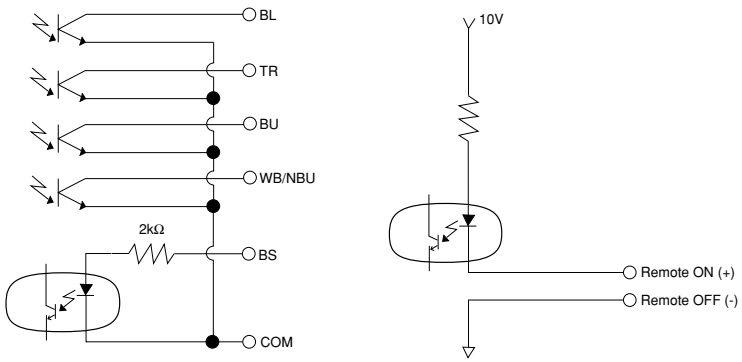
5. Contact Signal Connector (female DSUB9P)

Pin assignment	Pin number	Signal name
 Front view Screw size: inch screw #4-40 UNC	1	BL
	2	TR
	3	BS
	4	—
	5	COM
	6	Remote ON/OFF (–)
	7	Remote ON/OFF (+)
	8	BU
	9	WB/NBU

6. Contact Signal ratings

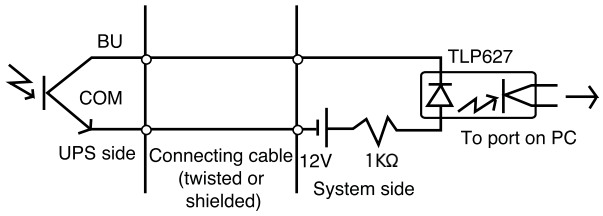
- Signal output (BL, TR, BU, WB/NBU)
  Photo coupler ratings
  Appliable voltage: 35 VDC or less
  Maximum current: 10 mA
- Remote ON/OFF
  Voltage between terminals: 10 VDC
  Current when closed: max.10 mA
- UPS Stop Signal input (BS)
  Input voltage HIGH 5 to 15 VDC
  LOW 0.7 VDC or less

7. Contact Signal circuit inside the UPS

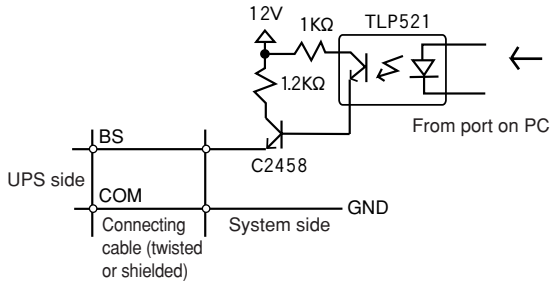


8. Example of the use of the Contact Signal circuit

- **Example of the use of the BU signal**



- **Example of the use of the BS signal**



9. Precautions and notes on the use of the Contact Signal

Notes

- When connecting a device that generates counter electromotive force to the signal output circuit such as a relay, connect diodes to prevent counter electromotive force at the both end of the relay.

Explanation

- When power is restored after the unit stopped automatically during a power failure, the unit automatically restarts and supplies power. If you do not want to start the connected devices, turn OFF their switches or set the auto restart setting (setting switch 2) to ON. (See page 32.)

7. Measuring the backup time
(Checking the discharge time of the battery)

7-1 Measuring method of the backup time

(1) Connect the AC Input Plug of the UPS to a wall outlet (commercial power) and charge it for approximately 12 hours.
If you operate the UPS for 12 hours or more, it is charged. If a power failure occurred during this period, charge it again.

(2) Turn ON all devices connected to the power output to be “backed up during a power failure”.
(Including devices connected to the AC outlet of your computer.)
Operate them in a way in which it is allowable that power supply to the connected devices stops.

- **For Windows Server 2003/XP/Me/2000/Windows NT/Linux:**
  To be performed in case of hard drive stops.
- **For Windows 98/95:**
  Choose Shut Down of Windows and follow the procedure below to shut down your OS.
  Choose "Restart in MS-DOS mode" to exit from OS and display the MS-DOS mode screen.

(3) Disconnect the AC Input Plug of the UPS and measure the backup time.
Measure the time until the unit automatically stops and all displays disappear with the plug disconnected.

* The backup time you measure for the first time after purchase is the "initial value of the backup time."

7-2 Estimated backup time

The backup time varies depending on the capacity of connected devices.
After calculating the total capacity of connected devices, refer to the graph of the backup time to obtain an estimation of the initial value of the backup time. (This is also applied to checking the battery.)

(1) Unify the total capacity (power consumption) of connected devices to W (Watt).
For the indication of connected devices, check your computer and the rear of the display.
There are 3 types of indication: VA (Volt·Ampare) indication, A (Ampare) indication, and W indication.

Example 1) 100 VAC, 50/60Hz, 145 W
Example 2) 100 VAC, 50/60Hz, 1.8 A
Example 3) 100 VAC, 50/60Hz, 150 VA

Indication	Value
VA	× power factor = W
A	× power factor × 100 = W

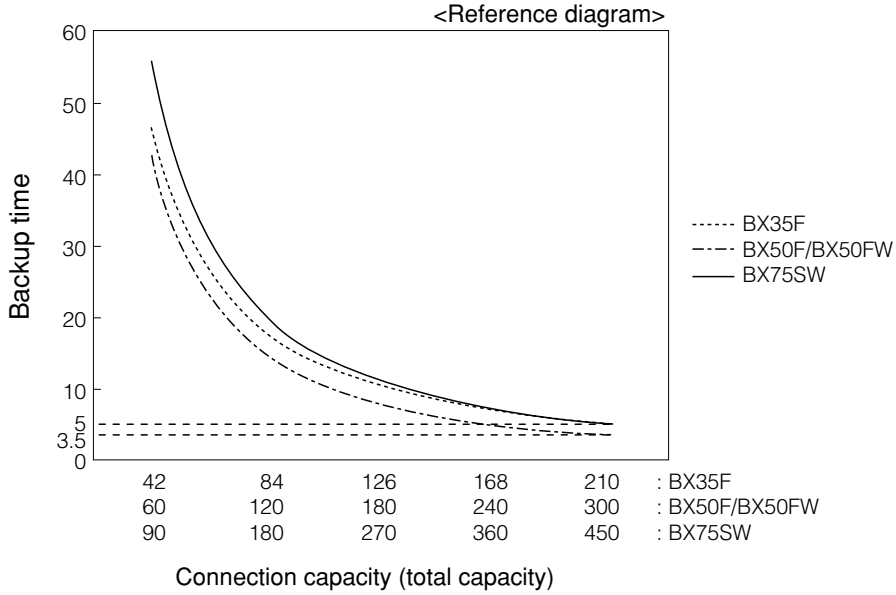
For devices that use the VA or A indication, convert the capacity into W. Multiply the value indicated on devices by the value in the right table for conversion.
(When the power factor is unknown, enter “1”. The power factor usually ranges between 0.6 and 1.)

(2) Add the values converted into W to obtain the total capacity of the connected devices.

(3) Calculate the initial value of the backup time for the total capacity of the connected devices from the graph below.

- Graph of backup time (initial value for product that has not been used)
- The smaller the capacity of connected devices becomes, the longer the backup time becomes.

<Reference diagram>



8. Troubleshooting

Perform the checks shown below if the unit is operating abnormally.
If the unit continues to operate abnormally, please contact our Electronic Systems & Equipments customer support center at _____.

Problem	Check and remedy
UPS does not operate. The LED display does not light up, even though the AC input plug is connected to a wall outlet (commercial power) and the power switch is ON.	1. Check that the AC Input Plug is connected to the commercial power securely. 2. The AC Input Overcurrent Protection worked and opened. (If the black button is popped up, it is suspected that there are too many connected devices or there is a short in connected devices.) Disconnect all of the connected devices, push in the AC Input Overcurrent Protection Black Button, and turn on the Power Switch of the UPS again. If the status indicator does not display normally, there is a problem with the UPS. (See "Interpreting a beep and display" on page 29.) 3. Isn't the voltage of the wall outlet (commercial power) too low? Stop devices that consume a lot of power such as an air conditioner. Check the UPS, for example, by connect it to a wall outlet (commercial power) in another room or house. (It does not operate when the voltage is less than 90V.)
Backup is not possible. The computer stops when a power failure occurs.	Isn't charging insufficient? Perform the test after charging the battery for at least 12 hours. You can charge the battery by connecting the AC input plug of the UPS to a wall outlet (commercial power).)
Backup is performed too frequently. Frequent switching is performed although a power failure does not occur. You hear the sound of switching.	1. The input power supply may be at fault. Connect the UPS to a wall outlet (commercial power) in another room or, if possible, another house and check it. Or, stop large devices such as a cooler. 2. Isn't a page printer connected? Because large current flows instantaneously in printers, normal backup is not possible.
The display is abnormal. ● The display is unstable. ● White lines occur. ● Noise increases.	1. The UPS generates some noise when performing backup. For displays susceptible to noise, distortion or white lines may occur, but the UPS is not at fault. 2. Grounding the UPS, computer, and display may improve this problem. 3. Noise during backup may become larger depending on connected devices, you can continue to use the UPS because this occurs due to rectangular wave output.
The battery replacement lamp blinks and the beeper sounds at 2-second intervals.	The battery is judged to be dead in the auto battery test or the self-diagnostic test. Battery Mode cannot be performed and therefore replace the battery pack.
The status indicator shows "OL", and the beeper sounds at 0.5-second intervals.	There are too many connected devices. There are too many connected devices. Reduce the number of connected devices until "On" is displayed on the status indicator.
The status indicator blinks "EO", and the beeper sounds continuously.	The UPS stopped because too many devices were connected for 3 minutes or more, or because 120% was exceeded. Turn OFF all power to the unit and connected devices, and reduce the number of connected devices. Then, turn the power to the unit and connected devices back ON and check whether "On" is displayed on the status indicator.
The output voltage is only approximately 80 V when measuring it with a tester.	The UPS outputs a special rectangular wave during the Batter Mode. Due to its characteristics, simple testers indicates approximately 80 V. The UPS is not at fault. To make correct measurement, you need a voltmeter that can measure "true rms value."

9. Description of related products

9-1 Using the Network Line Surge Protection Function (BX75SW Only)

Using the optional BT75XSX, you can protect your modem, TA, and network card from damage due to surge by absorbing surge voltage (abnormally high voltage) that may occur on the telephone line, ISDN line or network cable due to thunder.

*** If you do not use the Network Line Surge Protection Function, this section is not required.**

The following 2 types of connectors are available for the Network Line Surge Protection Function.

- RJ45 (8 Pins)
- RJ11 (2 Pins, 4 Pins, or 6 Pins)

Notes

Do not reverse the connection of Line/Hub Side and Modem/TA/PC Side of the Network Line Surge Protection.

- If a failure of the protection circuit occurs, the ISDN line and so on may be damaged.

1. When connecting to the telephone line

Connect the telephone line from the wall to the Line/Hub Side jack of the Network Line Surge Protection. Use the telephone cable (modular cable) included with the BT75XSX to connect between the unit's Modem/TA/PC Side jack of the Network Line Surge Protection and your modem, FAX, etc.

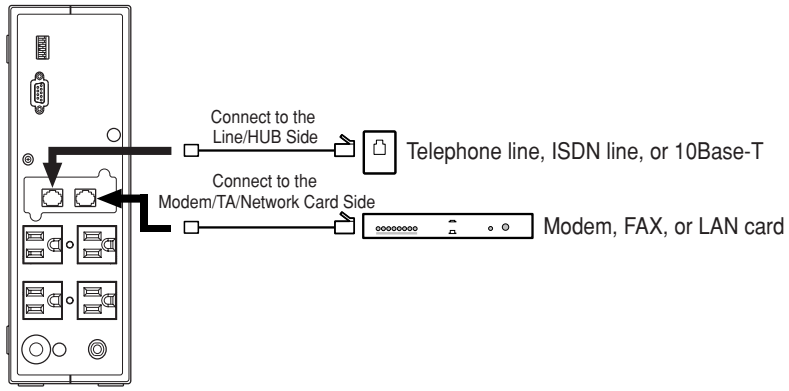
2. When connecting to the ISDN line

Connect the ISDN line that comes out of the wall to the Line/Hub Side of the Network Line Surge Protection of the UPS.
Use the telephone cable (modular cable) attached to the BT75XSX to connect between the Modem/TA/PC Side Jack of the Network Line Surge Protection of the UPS and your DSU (or terminal adaptor with built-in DSU).

3. When connecting to LAN 10Base-T/100 Base-Tx

To protect your 10Base-T/100 Base-Tx (twisted pair cable without shielding) network interface, you need to separately purchase a cable equivalent to your cable in use. Connect the 10Base-T/100Base-Tx cable from the HUB to the unit's Line/Hub Side jack of the Network Line Surge Protection. Connect between the Modem/TA/PC Side jack of the Network Line Surge Protection and the network interface of your computer with a separately purchased cable.

4. Connection example



9-2 Using the UPS monitoring software

*** If you do not use the UPS monitoring software, you can disregard this section.**

UPS monitoring software selection table

Model	OS	Communication method	UPS monitoring software	Required options (sold separately)
BX35F BX50F	Windows Server2003 Windows XP/2000	Serial (USB 1.1)	PowerAct Pro (included software)	
			UPS service (OS standard) + UPS service driver (included software)	
	Windows ME/98	Serial (USB 1.1)	PowerAct Pro (included software)	
	Mac OS X (10.3 or later) Mac OS X Server (10.3 or later)	Serial (USB 1.1) (Note 1)	UPS Power Manager (included software)	
BX50FW BX75SW	Windows Server2003 Windows XP/2000	Serial (RS-232C)	PowerAct Pro (included software)	
			UPS service (OS standard) + UPS service driver (included software)	
		Contact signal (Note 1) (Note 3)	UPS service (OS standard)	BUC16, BUC24 optional cable
	Windows NT4.0	Contact signal (Note 1) (Note 2)	UPS service (OS standard)	BUC16 (Note 4), BUC24 optional cable
	Windows ME/98	Serial (RS-232C)	PowerAct Pro (included software)	
	Linux(Note 5)	Serial (RS-232C)	PowerAct Pro (included software)	

Note 1: Files cannot be automatically saved.
Note 2: To automatically stop the UPS, it may be necessary to change the PC's BIOS settings.
Change the PC'S BIOS settings so that the PC's power supply is not automatically cut after OS shutdown is performed.
Note 3: Even if the UPS does not stop when the OS is shut down, it stops automatically when the battery is depleted.
Note 4: If the connected PC is an NEC PC-9800 series or PC9821-series computer, use BUC19.
Note 5: For the latest information, check our website at http://www.omron.co.jp/ese/

1. Using the included monitoring software

To use the software, use the "PowerAct Pro" (Windows/Linux), "UPS Power Manager" (Mac) and connect the PC to the unit using one of the following methods.

- ●BX35F/BX50F (USB connection) ..... Use the included USB cable to connect
- ●BX50FW/BX75SW (RS-232C connection) ..... Use the included RS-232C cable to connect

2. Using the UPS service in Windows Server2003/XP/2000

Install the “UPS service driver” that is on the included CD-ROM, and connect to the unit using the method shown below.

●BX35F/BX50F (USB connection) ..... Use the included USB cable to connect

●BX50FW/BX75SW (RS-232C connection) ..... Use the included RS-232C cable to connect

When there is a problem with the power supply, files can be saved, applications can be quit, Windows can be shut down, and the UPS can be stopped (shut down).

3. When using the UPS service in Windows NT 4.0

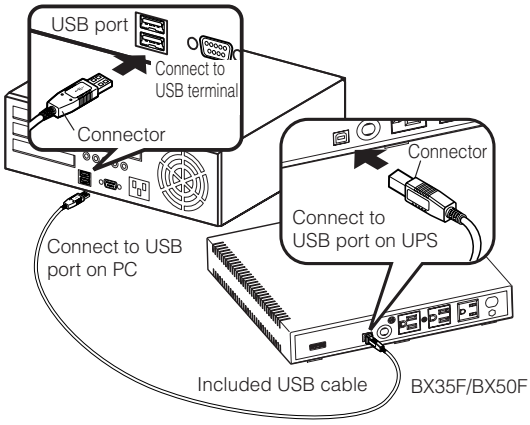
The OS standard UPS service can be used with a separately purchased cable.

●DOS/V machine (use a BUC16 or BUC24 optional cable to connect)

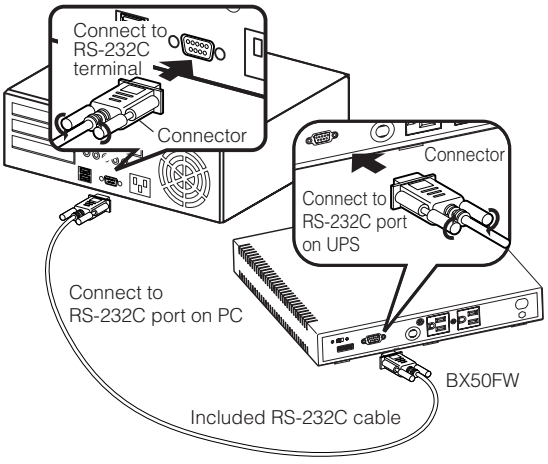
●NEC PC9801, 9821 machine (use a BUC19 or BUC24 optional cable to connect)

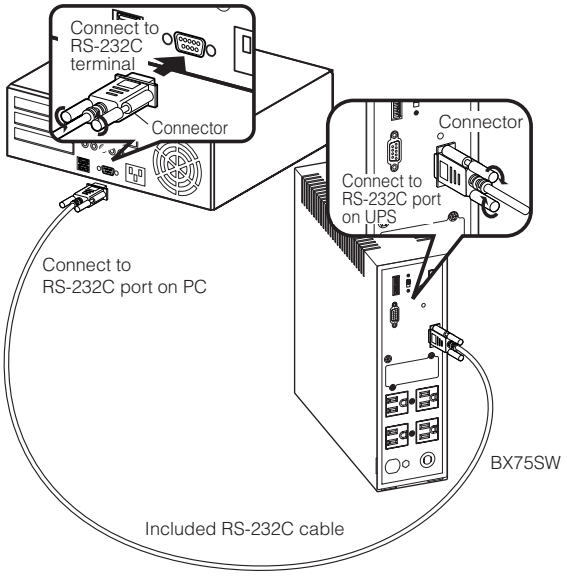
9-3 Connecting the UPS

1. USB connection



2. RS-232C connection





9-4 About the included UPS monitoring software

Using the included UPS monitoring software allows you to automatically save data files and shut down your computer when a power failure occurs. However, make settings so that the time from the occurrence of the power failure until computer shutdown is less than the maximum backup time. For more details, refer to the instruction manual and online help for the UPS monitoring software.

Using the included UPS monitoring software also enables you to change the unit's operation mode settings, use additional functions, perform scheduling operations, etc.

Explanation

Starting operation during a scheduled stop with UPS monitoring software

- If the unit starts operation during a scheduled stop period, turn the power switch OFF once, and then turn it back ON.
  You can start the unit manually.
  In this case, the next scheduled ON operation is cancelled.

Auto restart after OS shutdown by UPS monitoring software

- In the event of a power failure, some PC models (see *1 below) automatically restart immediately after the completion of the OS shutdown processing by the UPS monitoring software.
  In this case, the unit stops during restart or after startup, possibly damaging files and/or the hard disk.
  This problem can be avoided by disabling POWER MANAGEMENT in the BIOS settings.
  *1) PC models: This problem has been reported with MICRON Millenia Mme.
- When the PC does not start up automatically, select the "System startup at power restoration" setting (example: "Restore On AC/Power Loss) in the BIOS settings of your PC, and change to a "System startup after power restoration" setting (example: "Power On). Individual BIOS setting methods and/or displays may differ depending on the PC. For more information, refer to your PC instruction manual or the technical support center for your PC.
- When considering a system with automatic startup at power restoration, choose a PC that satisfies the condition shown below. For more information on PC operation when input power is supplied, consult your PC instruction manual or contact the PC technical support center.
  <Condition>
  Without pressing the power switch, the PC starts up when input power is supplied.
- After shutdown processing in the event of a power failure, the unit restarts automatically and supplies power once power is restored.
  If you do not want the devices connected to the UPS to start up, turn OFF their switches.
- The automatic restart setting can be disabled in the included UPS monitoring software.

References

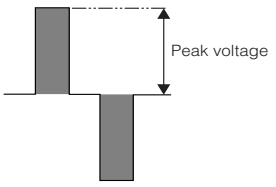
A. Specifications

		BX35F	BX50F	BX50FW	BX75SW
Method	Operation method	Full-time commercial power supply method			
	Connectable devices	PC, display, and peripherals			
Input	Input voltage range	86 ± 4 to 114 ± 4 VAC		100V mode 86 ± 4 to 114 ± 4 VAC 110V mode 96 ± 4 to 124 ± 4 VAC 115V mode 101 ± 4 to 129 ± 4 VAC 120V mode 106 ± 4 to 134 ± 4 VAC	100V mode 86 ± 4 to 114 ± 4 VAC 110V mode 96 ± 4 to 124 ± 4 VAC 115V mode 101 ± 4 to 129 ± 4 VAC 120V mode 106 + 4 to 134 + 4 VAC
	Frequency	50/60Hz±4Hz			
	Maximum current	8A	12A	12A	12A
Output	Waveform (In Commercial Power Mode/ Batttery Mode)	Sine wave / Rectangular wave			
	Output capacity (shared maximum)*1	350VA/210W	500VA/300W	500VA/300W	750VA/450W
	Voltage *2	90 to 110 VAC (during backup operation)	90 to 110 VAC (during backup operation)	100V mode 90 to 110 VAC 110V mode 100 to 120 VAC 115V mode 105 to 120 VAC 120V mode 105 to 120 VAC (During backup operation)	100V mode 90 to 110 VAC 110V mode 100 to 120 VAC 115V mode 105 to 120 VAC 120V mode 105 to 120 VAC (During backup operation)
	Switching time	10 msec. or less			
	Backup time*3	5 minutes or more	3.5 minutes or more	3.5 minutes or more	5 minutes or more
Battery	Type	Compact sealed lead battery			
	Charging time	Battery fully charged and with no condensation / 12 hours			
Environment	Operating ambient temperature	0 to 40°C (during operation)/ -15 to 40°C (during storage)			
	Operating ambient humidity	25 to 85%RH (during operation)/10 to 90%RH (during storage)			
External dimensions (W x D x H mm)		287 x 287 x 45	287 x 287 x 45	287 x 287 x 45	90 x 287 x 278
Weight of UPS		approx. 5kg	approx. 5kg	approx. 5kg	approx. 9kg
Internal power consumption (Normal, Max.)		10W	10W	10W	10W

*1: Do not use the UPS exceeding allowable connection capacity either in VA or W values specified in the specifications.

*2: Do not fail to confirm the system operation beforehand if the unit is used other than "Output 100V mode".
At the time of battery operation, the maximum voltage may be lower than the voltage at the time of usual operation (commercial power supply).
Rectangular waveforms during backup operation take the following values.

	BX35F/BX50F/BX50FW		BX75SW	
	The minimum voltage of the effective value	The minimum voltage of the peak voltage	The minimum voltage of the effective value	The minimum voltage of the peak voltage
100V mode	90V	103V	90V	115V
110V mode	100V*	103V*	100V	115V
115V mode	105V*	103V*	105V	115V
120V mode	105V*	103V*	105V	115V



*: The figures at 110V/115V/120V modes are effective only to BX50FW.

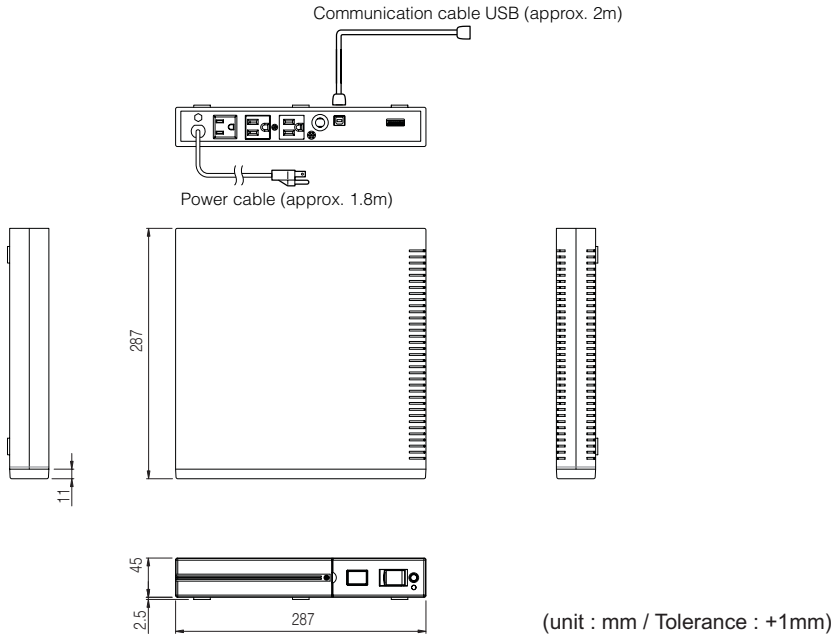
*3: At the rated load connection, 20°C, initial characteristics

B. Related products

	BX35F	BX50F	BX50FW	BX75SW
Spare battery pack	BXB50F	BXB50F	BXB50F	BXB75S
Attachment fittings	BXP50F	BXP50F	BXP50F	—
Network line surge protection kit	—	—	—	BT75XSX
Rack mounting bracket	BYP50R	BYP50R	BYP50R	—

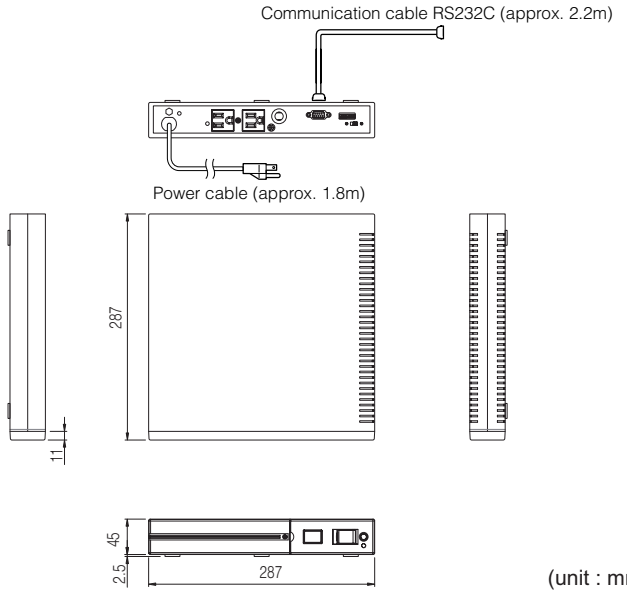
C. Dimensional outline drawing

BX35F/BX50F



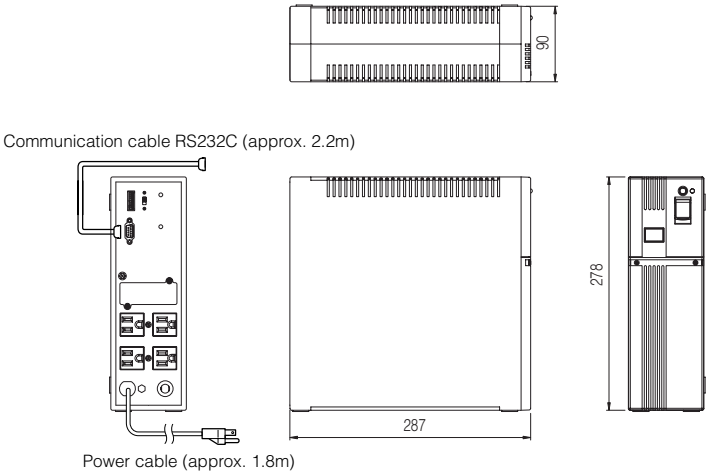
(unit : mm / Tolerance : +1mm)

BX50FW



(unit : mm / Tolerance : +1mm)

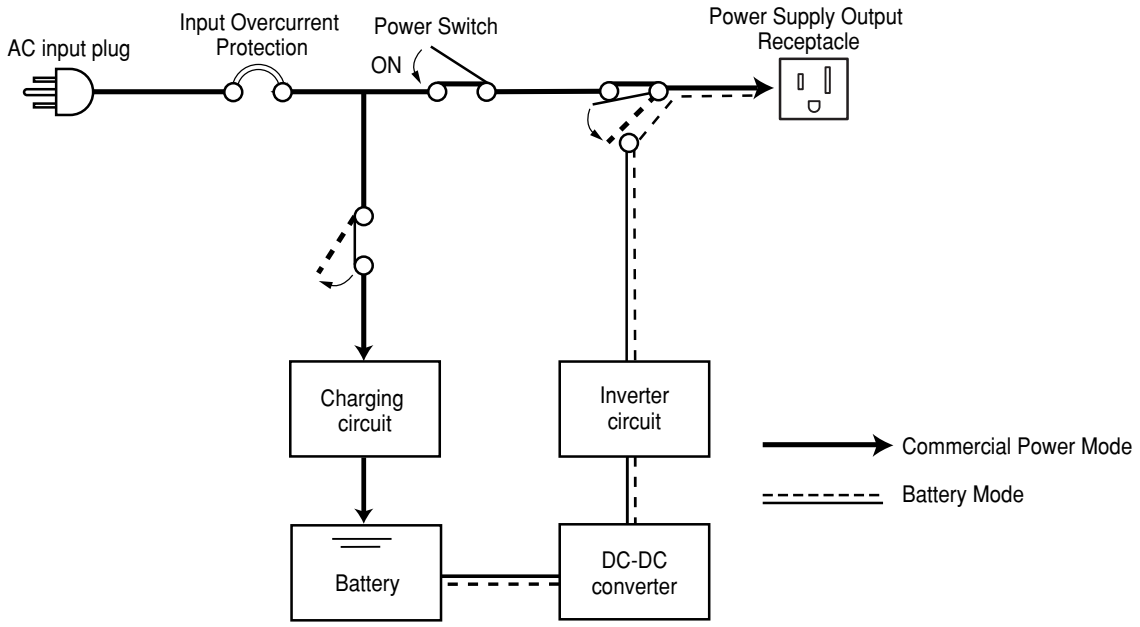
BX75SW

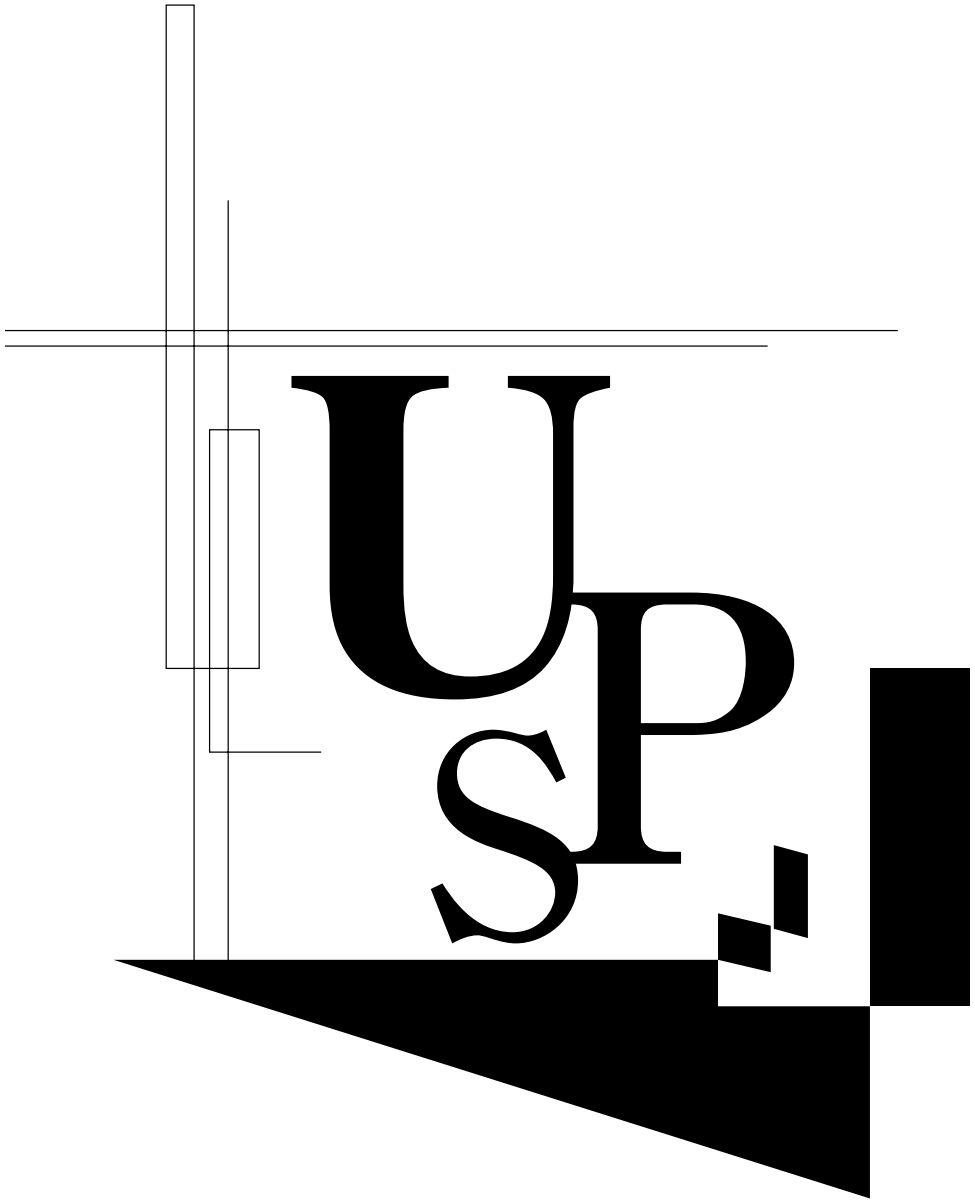


(unit : mm / Tolerance : +1mm)

D. Circuit block diagram

This UPS outputs power input from commercial power as it is and charges the battery at the same time. If a power failure or voltage variation occurs, the UPS automatically switches to operation using the battery and continues power output. At this time, the beeper sounds intermittently. When the power is recovered, normal operation using commercial power is automatically recovered. (The beeper stops.) You do not have to perform any operation.





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